SL Series User Manual

Version 13.1

For SL Free Edition, SL, and SL Plus Models

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Purpose of the User Manual

Please Read This Important Notice Before Using This Manual

AV and show control, by their very nature, can be very complicated processes, so a great percentage of the development time of ShowMagic has gone into making it as flexible, but as quick and easy to use, as possible.

The ShowMagic user interface has been optimised to make the best use of space, providing large and clear items that are easily recognisable for instant feedback and fast operation. To avoid cluttering the screen with numerous function buttons for every different function, extensive use has been made of keyboard shortcuts - primarily the [Shift] and [Ctrl] keys. These can be used in various combinations with items on the screen to perform many different operations, quickly and easily and a "Quick Key / Command Reference", p.175, is provided at the end of this manual.

The end result is an application that will enable you to create your desired results with as little time and effort as possible.

This user manual is intended as a guide to all the functions and features of the ShowMagic products. Each function is described in the relevant section of the manual and some examples are given for using those functions. ShowMagic has developed over the years into a very versatile and powerful piece of software, and if step-by-step instructions were given for using *every* function and feature then this manual would become a very large document indeed! To avoid this, many functions are simply described in brief as these should become clear with use and experimentation.

In order to understand the functions and features properly it is very important that you first read through the Beginner's Tutorial and practice the examples using the software first, before using this manual. The Beginner's Tutorial introduces you step-by-step to the basic operating principles - patching lighting fixtures, using those fixtures, creating lighting scenes, creating sound events, using lighting and sound to create sequences etc.

Once you understand the basic operating procedures described in the Beginner's Tutorial, the more in-depth features and functions described in this user manual become much easier to understand and use.

Experimental Features

Certain features may have experimental status. Experimental features are listed in the release notes for the ShowMagic product you are using and are also marked in this manual with the 'EXPERIMENTAL' label.

Experimental features are features that require more feedback before full integration into ShowMagic. They have passed through internal and beta test programs, but due to their complexity, or the vast variety of hardware that the feature supports, require more usage before losing the experimental status and being incorporated as a standard feature.

In the majority of cases, you will not notice any difference between an experimental and a standard feature. However, it is best to assume that experimental features may not be fully stable or always function as expected. We do not recommend their use in a production environment without thorough testing. The functionality or method of operation of expermental features is also more liable to change or to be removed in later versions.

Experimental features should not effect the standard features of ShowMagic if you decide not to use them.

Notes on using the User Manual

It is assumed that the reader is at least familiar with DMX and their fixtures. It is also assumed that the user is reasonably familiar with using menus, dialogue boxes, etc. in Windows.

Mouse Commands

'click'	Click the left mouse button.
'right-click'	Click the right mouse button.
'double-click'	Click the left button twice in quick succession.
'double-right-click'	Click the right button twice in quick succession.
'drag'	Press and hold down the left mouse button on an item (e.g. a fader) and slide the mouse up or down. To drag and drop an item from one place to another, press and hold down the left mouse button on the item you wish to drag, move the item to where you wish to put it, and then let go of the button to 'drop' it.

Style Conventions

The following style conventions are used throughout the manual:

[Ctrl]	Keys to be pressed on the keyboard, e.g. press the key marked 'Ctrl'.
Normal	Non-ShowMagic items e.g. names of devices, RS232 input strings etc.
Italics	Editable commands, values, labels and filenames.
Bold	Faders, buttons, menu items and other non-editable 'objects'.
Bold Italic	Non-editable but selectable options.
Underline	Fixed titles, step numbers etc.

Where steps are given as part of an example they are shown:

1) Step 1
2) Step 2 etc.

Similarly lists of the options or information available are shown:

a) Option 1

b) Option 2 etc.

The numeric keypad on the right of your keyboard can be used for setting channels and entering values for faders etc. The Num Lock key should be used to ensure that Num Lock is kept on at all times.

Times

Where timings are used with ShowMagic events, these timings are in the following format:

Hours, Minutes, Seconds and Frames shown thus: HH:MM:SS.FF (a frame being 1/25th of a second - shown from .00 to .24. e.g. 12 frames equals half a second).

Where HH are the hours, :MM are the minutes, :SS are the seconds and .FF are the frames.

e.g. 09:08:07.06 = 9 hours 8 minutes 7 seconds and 6 frames.

Where hours, or hours and minutes, are not appropriate the timings MM:SS.FF and SS.FF respectively are used.

Section 1 - Overview

The ShowMagic range of products enables you to control, from a single PC, literally all the technical aspects of any show or presentation that uses:

- Lighting
- Audio playback
- Audio input-output routing
- Effects equipment
- RS232, MIDI or IP controllable devices (IP device support is EXPERIMENTAL)
- Multiple digital signs (pictures, text and FX), PowerPoint, multiple video file playback and 'live' video capture.

In other words, in the case of ShowMagic AV, it is a software equivalent to a:

- Lighting desk
- Sound playback device and audio mixer / router
- Device controller
- Digital signage content creator / player and PowerPoint slideshow player
- Video file player and live video router

Models of ShowMagic are available in two 'sizes' to suit the maximum number of DMX channels that you need to control - 512 on standard models, and 2048 on the 'Plus' models. There are 3 ranges of ShowMagic:

SL	**S**ound output, **L**ighting control and MIDI device control
SLX	**S**ound output & input / output routing, **L**ighting control, MIDI device control, e**X**ternal RS232, IP (EXPERIMENTAL) device control plus auto-scheduler
AV	As SLX but including on-board software video file playback with captured video output, multiple digital signage creation / playback and single PowerPoint slideshow playback. Up to 3 displays are supported in the AV model. The AV Plus model provides the same functionality as the standard AV model but supports up to 5 monitor outputs and also includes multiple, synchronized software-decoded video file playback.

General Operation

Whichever model you are using, the methods of operation are consistent throughout the range. If you upgrade to another model at a later time you can use your existing desk files and it will work just the same as the model you have been using, but you will have access to more features which themselves use similar and consistent methods of operation.

The ShowMagic desk has been designed to be as simple, quick and easy to use as possible. Just like a hardware lighting desk or audio mixing desk, the ShowMagic desk uses displays and faders but these are operated with the keyboard, mouse or a touch screen. Lighting scenes, sounds, video, digital signage etc. are all treated in ShowMagic as 'events'.

On SLX and AV models you can connect any DMX lighting desk to ShowMagic, using a selection of DMX input interfaces, and then control all your ShowMagic events from that lighting desk. You can also transfer existing lighting scenes, stored on an external DMX hardware desk, quickly and easily into ShowMagic then take the desk away!

The unique ShowMagic twin panel system enables you to quickly access any events stored on the desk. Two panels are viewed at once - one on the left and one on the right. Panels are available for each type of event - lighting scenes are stored on the lighting scene panel, sound events are stored on the sound panel and so on. Clicking on the appropriate tab at the top of one side of the desk selects that panel on that side of the desk.

Events are all stored on event buttons on their appropriate panels. Clicking once on a button highlights it (this is then shown brighter) and the details of the event stored on that button are displayed in the details display at the top of the panel. Double-clicking on a button is the equivalent to pressing it and this will start the event (if it is not currently running) or stop the event (if it is currently running) i.e. double-clicking on an event button toggles it on and off. The main advantage of using this button system is that you can label each button with a descriptive name and the function of each button is then instantly recognisable at any time. Each type of event is also color-coded so you also know at a glance what type of event is stored on that button.

Motor control buttons are used on the ShowMagic desk that are similar to controls on an audio or video player. For example, the **Play** (or **Go**) button runs the event assigned to the currently highlighted button on that panel, the **Pause** button pauses the event, and so on. The motor controls available for an event varies depending on the type of event stored on that button.

Most shows or presentations are simply a series of events, so ShowMagic lets you put these events together in a ShowMagic 'sequence'. Each sequence is divided into 'steps'; step 001, step 002 etc. (up to a maximum of 999 steps per sequence), and any events can be 'dropped' into a sequence step. When the sequence is run the first event (shown as step 001) is activated followed by the second event (shown as step 002) and so on to the end of the sequence. A sequence is stored on a button on the sequence panel, and when sequences have been created they can themselves be treated as events that can be dropped into other sequences. This makes it extremely powerful, yet simple to use.

The range of slider movement on the ShowMagic virtual desk faders is 128 screen pixels, but the actual resolution of the fader value adjustment is 256 steps. It was not possible to use a 256 pixel fader strip as the screen resolution is not high enough, so a single pixel movement of a fader on the screen is equal to 2 steps. This does not pose a problem however as normally this resolution will be adequate, but where single step adjustment is needed this can be set in one of two ways:

a) Hold down the [Ctrl] key whilst moving the fader; this will select finer fader adjustment and decrement / increment the value in single steps.

b) Move the fader to the approximate value that is required and then left / right-click on the value below the fader to decrement / increment the value in single steps.

Load Desk and Save Desk

The complete set-up of a desk can be saved using **Save Desk** and later loaded in again using **Load Desk** -both available from the **File** menu on the main desk screen. A single desk set-up programmed for just a few lighting scenes, a show or even numerous shows can be saved and loaded at any time. The **File > New Desk** option will clear the desk set-up after confirmation and a copy of the current desk is automatically saved as a file called *Backup.dsk.*

Normally when ShowMagic is initially run, all the lighting scene, sound, control event and sequence buttons are empty. Each can then be selected and programmed, or alternatively, a desk set-up that was previously programmed can be loaded in using **Load Desk** and then adapted to create a new one.

VERY IMPORTANT:
We recommend that you should save your work regularly. An auto-save feature is provided to do this automatically for you. It is also a good idea to save an important desk set-up file twice under two different names e.g. *MyShow.dsk* and *MyShow-Backup.dsk* - should one of the files get inadvertently overwritten or deleted then you can revert to the other.

Floppy disk, CD Rom or USB memory stick back-ups are also strongly recommended and we have implemented optimised load and save routines that keep the size of desk (.dsk) files to a minimum, enabling even desk set-ups for large shows to be saved to a single floppy disk or low capacity memory stick.

ShowMagic files can be loaded from, or saved to, anywhere on your hard disk(s) but they default to their own folders within the program folder (the default being *C:\AVSS\ShowMagic Model*, where *'Model'* is the name of the ShowMagic model you are using).

ShowMagic desk capacities:

Lighting Scenes	Sequences	Sounds	Action Buttons	Control Events
2304	1536	960	960	960

The term ‘DMX’ used throughout this manual is a general reference to the type of lighting control output you are using. If you have selected Art-Net (EXPERIMENTAL), PMX or MIDI for lighting control output then treat the term DMX as a reference to that.

When the desk is running scenes, chases, sound events or sequences, the DMX and sound output take priority over what is displayed on the PC screen. In extreme cases, unavoidable due to the possible use of very old, slow PC graphics cards etc, the updating of faders, time displays, etc. on the screen may 'lag' behind, or jump slightly, but the actual output of audio, video or DMX will be consistent and correct.

Where possible, and appropriate, alternatives are provided to using the mouse where the keys on the PC keyboard can also be used to perform many of the functions. The numeric keypad on the right of your PC keyboard can be used in a similar way to the keypads on hardware lighting desks for patching channels and setting values etc.

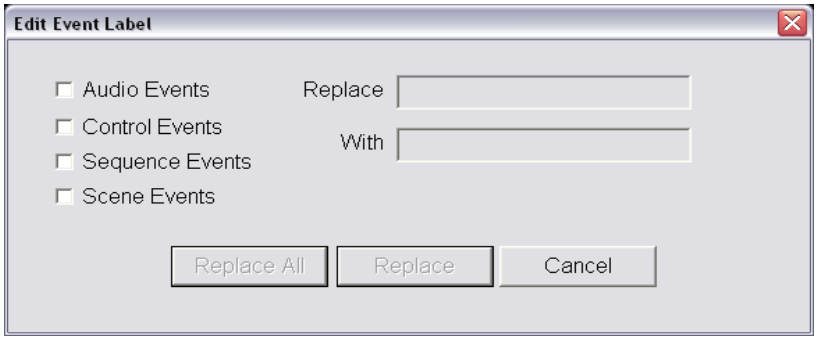
Edit Event Label

User-editable event labels can be applied to all ShowMagic event buttons. Selecting this item enables you to globally, or selectively, find and replace all, or sections of, any event labels. This eliminates the need to go to each event button, highlight it, double-click on its label in the details display and then edit the label.

Example:

If you had recorded a number of lighting scenes for a venue's entrance hall and had labeled these as say *Entrance Red*, *Entrance Green*, *Entrance Blue* etc. The venue owner then decides that the area should be referred to as the Foyer, you can then replace all occurences of 'Entrance' in the labels to 'Foyer' in the following way:

1. Click on the **Edit Menu** > **Event Label** menu item and this will produce an Edit Event Label dialogue box thus:



2. Tick whatever types of events you wish to replace the labels in. In this instance we are changing the lighting scene events only so tick the Scene Events item.

3. Type *Entrance* into the Replace box and *Foyer* into the With box.

4. If you want to replace all occurrences of the label click on the **Replace All** button.

   Alternatively, click on the **Replace** button if you want to replace each label selectively – you will then be prompted with a dialogue box to confirm each replacement.

Note: The text that you type into the Replace box is case-sensitive and must match the label being replaced.

Section 2 - Events

Color coding is used on the ShowMagic desk for instant recognition of event types and item functions:

Red	Event Button - Lighting scene events
Orange	Event Button - Sound events
Cyan	Event Button - Control events
Purple	Event Button - ***Chase*** sequence
Green	Event Button - ***Manual***, ***Timed*** or ***Random*** sequence
Blue	Event Button - ***Snapshot*** sequence
Grey	Event Button - Empty; no event is currently stored on that button.
Yellow	Text and values in yellow can be changed by double-clicking on them to produce a dialogue box.
Light Blue	Text and values shown in light blue can also be changed but in most cases the [Ctrl] key must also be held down at the same time - this is to prevent the accidental changing of more critical settings. The requirement of the [Ctrl] key can, however be disabled (see "General Settings Menu" p. 153). On the lighting scene panel, clicking on any blue items in the details display produces a dialogue box.
Pink	Used for Pop-Up Menus - Text and values shown in pink can be changed by right-clicking on them. This produces a pop-up menu from which options can be selected.

Lighting Scenes

A lighting scene is simply a desk setting, or lighting state, in which lighting fixture fader settings are stored along with settings for how that scene should occur when the scene is run using Wait, fade In, Hold and fade Out times. These are in hours, minutes, seconds and 25^{ths} of a second (frames) and a maximum time of 23 hours, 59 minutes, 59 seconds and 25 frames can be set: *23:59:59:24* (00 to 24 = 25 frames).

Sound Events

ShowMagic takes full advantage of a PC's ability to play MIDI and digital audio files from hard disk. Add to this the ability to mix these PC audio sources with any external audio devices such as audio mixers, microphones, etc. via any digital, line-level and microphone-level input connectors on your PC soundcard / interface, and you have a very flexible sound system. The quality of sound from ShowMagic is of course dependent on the soundcard(s) that you have installed in the PC.

Digital audio files are the most useful source for sound, as playback is virtually instant and they can all be stored on hard drive for easy access.

ShowMagic supports 2 different types of audio drivers - DirectShow drivers and ASIO drivers. Either or both of these drivers may be available for one or more of the audio outputs on the soundcard depending on the audio hardware you are using. For instance, with an M-Audio Delta 1010 multiple input / output soundcard there are DirectShow drivers available for analogue outputs 1 to 8 and ASIO drivers available for analogue outputs 1 to 8. Both these drivers 'share' the same physical outputs on the card. Where there are DirectShow drivers available for the physical audio outputs, we refer to these herein as 'DirectShow channels'. Similarly, where there are ASIO drivers available for the physical audio outputs, we refer to these herein as 'ASIO channels'.

Microsoft 'DirectShow' Drivers

Audio files in uncompressed '.wav' file format, and audio files in '.mp3', '.wma' or '.aif' compressed formats can all be played by ShowMagic using any available outputs with DirectShow drivers. On the 'Default' Directshow channels (as selected on the Windows 'Sound and Audio Devices' dialogue box) multiple files (of multiple types) can be played at the same time.

Please Note:

On any other DirectShow channels (other than the default) only one audio file can be played at any one time. If an audio file is started - that uses the same channels as another audio file that is already playing on those channels - the previous audio file is stopped.

ASIO Drivers

ASIO drivers only support playback of un-compressed .wav files, but the advantage of using ASIO outputs is that multiple uncompressed wave (.wav) files can be played to any of the multiple audio outputs (with up to 16 channels synchronized) and on SLX and AV models audio inputs can also be mixed / routed to any of the multiple outputs. As described later in this manual, any available DirectShow or ASIO channels that ShowMagic finds available are listed in a pop-up menu, and can be selected for routing your audio files.

Please Note:

Not all soundcards that have more than 2 audio outputs allow you to adjust the volume levels on the DirectShow channels using the ShowMagic volume faders. This is dependent on the soundcard and its drivers. PC MIDI files can be useful for some applications as these files are very much smaller than wave files. 5.1 and 7.1 surround-sound files can also be played using a suitable 5.1 / 7.1 soundcard / interface.

On a standard Soundblaster compatible PC soundcard, Digital, line-level, microphone-level inputs and MIDI files are all played through the same default DirectShow stereo outputs on the card; the volume mixing of each of these can however be set independently via the ShowMagic desk.

Full control of volume fade-in and fade-out and stereo balance for each sound event, each of the audio channels or the master volume for all audio channels, is also available via the desk. The start and stop playback positions of digital audio and MIDI files are also selectable. For instance you can start playing a wave file from any point (to the nearest 25th of a second) into the sound file.

Control Events

Control commands can be sent and received using MIDI via any MIDI port(s) available on your PC, which enables ShowMagic to control MIDI controllable devices such as audio effects units, audio mixing desks etc.

Sequences

Sequences can be used to group and run multiple events for a wide variety of purposes. For example, a series of lighting scenes can be run to simulate flashes of lightning whilst at the same time thunder sound effects can be played in exact synchronization to complete the effect. Alternatively, particular sections of a show, or even an entire show can be created as a sequence. The way in which shows and presentations are run can vary enormously so there are 5 different sequence types available in ShowMagic to allow for this. They are:

a) ***Chase***

b) ***Manual***

c) ***Timed***

d) ***Random***

e) ***Snapshot***

Chase - Unlike single lighting scenes that occur only once each time they are run, a lighting chase is a sequence containing two or more lighting scenes. When the chase is run the first scene in the chase is executed followed by the second, etc. and a chase defaults to run continuously in a loop until it is stopped. If a sound event is contained in a chase sequence it is ignored.

Manual - This is similar to a 'Cue List' on popular lighting desks, but unlike lighting desks, a ShowMagic ***Manual*** sequence can be used to 'cue' much more than just lighting scenes. You may be running a show where, for instance, lighting scenes, music, sound effects etc. must be operated manually to allow for fluctuations in human participants' timing. Each step of a manual sequence (lighting scene, music etc.) can be activated manually by pressing the [Spacebar] key (if the sequence panel is on the left hand side), or by clicking on the green **Go** button on the panel when that sequence button is selected (highlighted).

Timed - To create an automated show or presentation where each event is activated at a pre-determined time, the sequence type can be set to ***Timed***. A time (referenced from the start of the sequence) can then be set for each step in the timed sequence at which that event will be automatically activated.

Random - With chase, manual and timed sequences, event steps are activated sequentially through the sequence list, but in a random sequence the next step to activate is chosen randomly from the list by ShowMagic. For instance, steps 001 to 004 might contain 4 different lighting scenes or

lighting chases. When that random sequence is run it may trigger step 003 first, followed by step 1 next, and so on. The time between each step being activated is also chosen randomly (between selectable minimum and maximum times) to create an ever-changing show or effect.

Snapshot - The current 'condition' of a ShowMagic desk can be 'captured' to create a snapshot. All events that are running on the desk when a snapshot is recorded are automatically stored in that snapshot and running that single snapshot will turn all those events on at the same time.

Action Buttons

One of the most powerful design features of ShowMagic is its action panel. Rather than having to select each event's panel in order to access that event's button, any type of event (a lighting scene, sound event, sequence etc.) can be dropped onto an action button on the action panel. By having a variety of events assigned to action buttons you are able to instantly control any elements of a show from a single panel by double-clicking on the appropriate action button.

Action buttons can be turned on and off (triggered) automatically when ShowMagic receives selected MIDI notes, program change or control change commands from any external MIDI keyboard or MIDI sequencer connected to the MIDI port on the PC.

A handheld RF 'media player' remote control can be used to control the currently highlighted action button.

Section 3 - Patch Screen

The Patch screen is not used very often as it is designed for performing the initial set-up and other 'one off' functions:

- Checking what audio capabilities have been detected by ShowMagic.
- Selecting the makes and models of DMX lighting fixtures you are using and assigning these to 'virtual' fixture faders on the ShowMagic fixture panel.
- Setting the DMX addresses of the lighting fixtures.

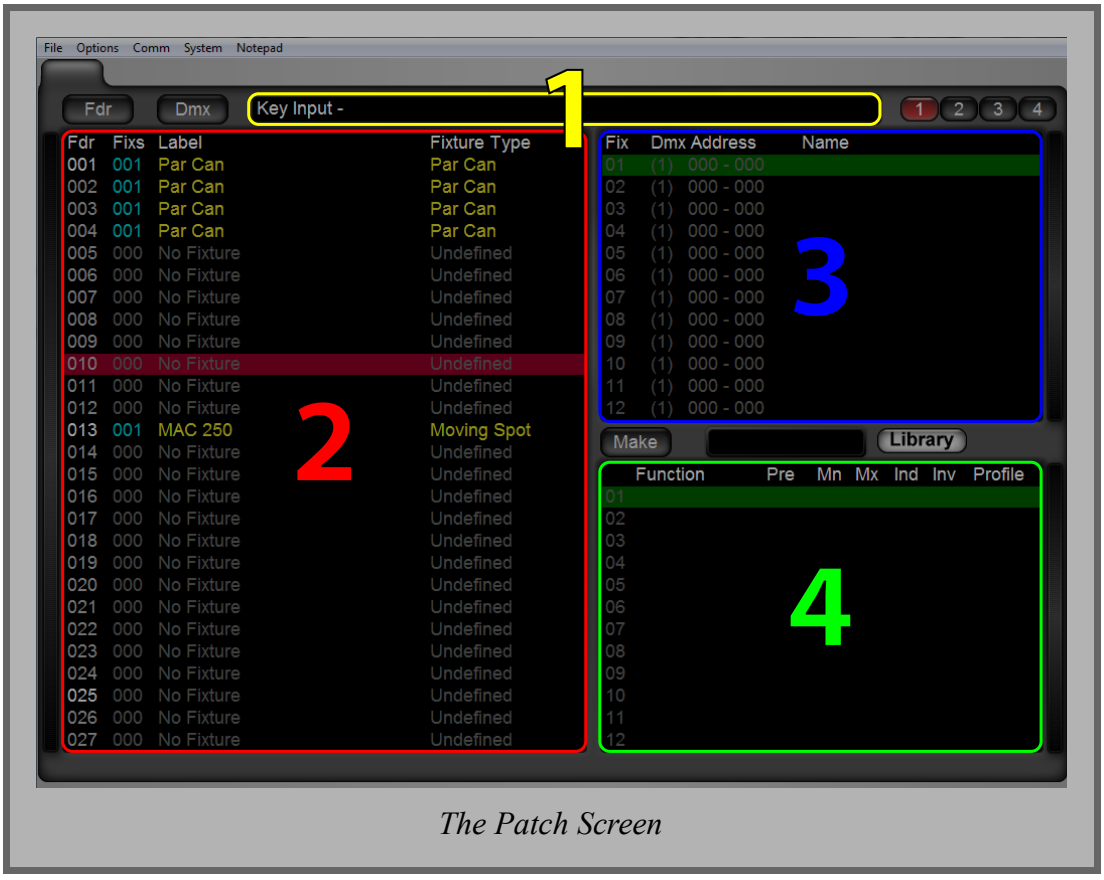
Please Note:
With all models of ShowMagic, any DMX addresses between 001 and 512 can be used. The DMX addresses can also be spread across up to 4 universes. However the *amount* of DMX channels that can be assigned to fixtures is dependent on the model as follows:

SL Free Edition = 24 DMX channels.

SL, SLX & AV models = 512 DMX channels.

SL Plus, SLX Plus and AV Plus models = 2048 DMX channels.

Assigning Physical Fixtures to the ShowMagic Virtual Desk



The Patch Screen

The Patch screen consists of 4 main displays / windows:

1 - Key Input
This is where you can enter commands.

2 - Fader List
This where you assign fixture 'types' to the fixture faders on the main screen's fixture panel.

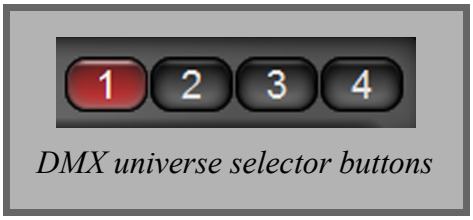
3 - Address List
This is where 'physical' fixtures and their DMX addresses are shown / set.

4 - Function List
This is where the functions of the fixtures are shown / set.

Two test buttons, **Fdr** and **Dmx**, a **Make** button and a fixture **Library** button are also provided. The **Library** button is used for selecting lighting fixtures that are contained in the ShowMagic fixture library. Clicking on this button produces a Fixture Library dialogue box from which you can select first the Make of fixture, then the Model and lastly (if the model possesses different options or modes, e.g. 5 channel mode, 7 channel mode etc.,) the required option can be selected from the Option drop down menu.

Vertical scroll strips are provided to the side of the patch screen displays, for when all the items in the list cannot fit within the depth of the display area. These scroll strips enable you to quickly scroll through the lists by simply dragging the mouse pointer up or down the strip, or alternatively, clicking on the strips will scroll up the list one item at a time and right-clicking will scroll down the list one item at a time.

DMX Universes
A DMX 'universe' can only support up to 512 DMX channels. In order to accommodate applications where more than 512 DMX channels are required, or where the DMX channels are split across a number of universes, the number buttons to the right of the Command display are used for selecting the appropriate DMX 'universe' when patching fixtures. The correct 'universe' number should first be highlighted when patching addresses.



DMX universe selector buttons

Clicking anywhere in a display selects it and it is shown with a red highlighting bar (the highlighting bars in the other non-selected displays are shown in green). You can also scroll up and down through the currently selected display by using the [Up] and [Down] cursor keys.

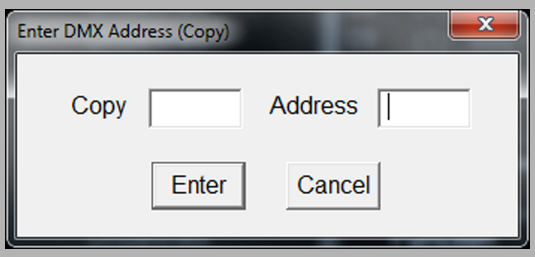
With the demo desk loaded we will add a number of fixtures to the desk using the patch screen to see how the various patch functions work. This can done by using the quick patch and copy feature, by using patch and copy commands, or a mixture of both.

Quick Patch and Copy Feature

1) Highlight Fdr 009 in the Fader list (on the left of the patch screen) by either clicking on it or using the [Up] and [Down] cursor keys to highlight it.

2) Click on the **Library** button and a Fixture dialogue box will appear. Select: **Generic Lamp** from the Make drop down menu and then select **Par Can** from the Model drop down menu. *Par Can* will then appear under the Label title and under the Fixture Type title. The one function for that fixture, Dimmer, will also appear in the Function list on the bottom right of the patch screen.

3) Double-click on the address values (currently shown in grey as *000 - 000*) in the top right window under the title DMX Address and an Enter DMX Address (Copy) dialogue box will appear.



'Enter DMX Address (Copy)' dialogue box

4) Type the value 50 into the Address box to enter a start address of *050* for that fixture. If you wanted to assign another 3 par cans to the consecutive faders 010, 011 & 012, and patch them at consecutive DMX addresses 051, 052 & 053, then additionally, type *3* in the Copy box before clicking on the **Enter** button. 4 par cans will then be automatically assigned to fixture faders 009 through 012 and they will be automatically patched to DMX addresses *050* to *053*.

5) Highlight Fdr 013 in the list by either clicking on it or using the [Down] cursor key. Then using the **Library** button select: Make **Clay Paky** Model **GoldenScan HPE**. The label *GoldenScan HPE* will then appear under the Label title and *Scanner* will appear under the Fixture Type title. The 12 functions of the GoldenScan HPE will also appear automatically in the Function list.

6) Double-click on the DMX address for that fixture and an Enter DMX Address (Copy) dialogue box will appear. Type a start address of *55* in the Address box and click on **Enter** button. That fixture will then be patched to DMX addresses *055 - 066* as it is a multi-channel fixture that uses 12 DMX channels.

Clearing an Address

To delete a DMX address for a fixture do the above but enter 0 for the new address. This will clear the address back to *000 - 000.*

Fader List

The Fader list display shows the following information for each of the fixture faders:

Fdr - The ‘fixture fader’ number is shown under this title. The number for the first fixture fader on each page of fixtures on the fixture panel on the main desk is highlighted in white.

Fixs - The number of fixtures assigned to that fader is shown under this title. Up to 24 individual fixtures (or banks of fixtures if they share the same DMX channels) can be patched to a single fixture fader, but they must be of the same generic type (par cans, fresnels, etc) or the same make and model for multi-channel fixtures.

Please Note:
If you assign more than one fixture to a single fixture fader then you cannot control each of those fixtures individually - all those fixtures will always do the same thing as the others. If you want independent control of fixtures then those fixtures must be assigned to separate fixture faders.

Label - The label for that fixture fader is shown under this title. Like all items shown in yellow this label can be edited allowing you to give fixture faders meaningful names.

To edit any labels simply double-click on the label and an Enter Label dialogue box will appear. Edit the label and then press [Enter], or click on the **Enter** button, to enter the label. As an example, double-click on the label *Par Can*, edit it to *Front Cans* and then press [Enter] to enter that label.

Similarly, double-click on the label *GoldenScan HPE,* edit it to *Front Scan* then press [Enter].

Type - The type of fixture assigned to that fader is shown under this title. A copy of this name is used as the default ‘label’ until you edit the label (as described above) and replace it with your own.

Fixture List

When a fader row is highlighted in the Fader list the addresses that the fixture (or fixtures) are patched to are displayed here. Initially, when a fixture is selected using the **Library** button there are no addresses assigned.

The information provided in this display is as follows:

Fix

Each physical fixture(s) that is patched to a fixture fader is shown under this title in white by its number (1 to 24) e.g. if you assigned 4 par cans with different channels (DMX addresses) to the fader, the Fix numbers 1 to 4 would be shown in white with the remaining Fix numbers 5 to 24 shown in grey to indicate that they were not used.

Dmx Address

The DMX address range for each fixture patched to the fixture fader is shown under this title.

Name

This can be edited, in the normal way, for easy identification of the fixture(s) or bank of fixtures. If the fixture you are patching uses a dip switch for setting its DMX start address and you wish to view the dip switch setting for the DMX channel set for that fixture on the patch screen then

clicking on the **Options > Display Dip Switch** menu item to tick it will replace the fixture Name with the correct dip switch setting to set on the fixture for that DMX address. Clicking again on the **Options > Display Dip Switch** menu item will un-tick it and the dipswitch settings will be replaced with the fixture Name.

When assigning physical fixtures to fixture faders using the fixtures menu, the necessary number of channels for that fixture is automatically patched once the 'start' address is entered. The figure shown in brackets is the DMX universe number (1-4).

Patch and Copy Commands

Another method of patching and copying fixtures is by using commands. Patch and Copy commands are particularly useful if you are assigning and patching multiple fixtures - that are not addressed consecutively - to one fixture fader.

Let us assume that you are using 4 par cans whose individual dimmers are set to channels 10, 12, 15 and 17 and a GoldenScan HPE set to channel 50 and you wish to control the 4 par cans using a single fader. The following is how you would patch those fixtures:

1) We will start with an empty desk so select the **Options > Main Screen** menu item, select **File > New Desk** from the main screen and click **OK** to confirm, then select **Options > Patch Screen** to return to the patch screen.

2) Using the **Library** button select Make **Generic Lamp** Model **Par Can** for Fdr 001 and Make **Clay Paky** Model **GoldenScan HPE** for Fdr 002.

3) Highlight the Fdr 001 row (par can) in the Fader list.

4) With [Num Lock] on, use the numeric keypad on the right of the keyboard and press the 1 key, then the asterisk key, then the 1 then 0 keys followed by the Enter key i.e. [1] [*] [1] [0] [Enter]. This patches the first fixture for fader 1 'at' DMX channel 10; the [*] key being used to represent 'at'. Fader 1 is highlighted as the active fader, so after pressing the keys [1] [*] [1] [0] the command *Fdr 001 Fix 1 at 10* appears in the Command display which means that fixture 1 on fader 1 is being patched to DMX address 10. Pressing [Enter] confirms this command, or alternatively, you can press the [Del] key to delete and re-enter the patch command before pressing [Enter]. The [Del] key on the numeric keyboard is used only for deleting commands. The [Delete] key above the cursor keys is used for many other purposes.

   Please Note:
   An alternative way to enter the start address of any fixture is to double-click on its DMX Address row and a dialogue box will appear - type in the address and confirm, or click on **Cancel**.

5) Highlight the line below the fixture in the Fixture list, press [Insert] and this will add a fixture to that fader. Do this twice more and you will end up with four fixtures assigned to Fdr 001 (Highlighting any fixture and pressing [Delete] will delete that fixture assignment from that fader after confirmation).

6) Press [2] [*] [1] [2] [Enter] then [3] [*] [1] [5] [Enter] then [4] [*] [1] [7] [Enter]. This patches the 2nd, 3rd and 4th fixtures of that fader to addresses 12, 15 and 17. These are then shown in the Fixture list and 004 is shown under the Fixs title in the Fader list to indicate that four fixtures are assigned to that fader.

7) Highlight the Fdr 002 row (*GoldenScan*) and press [1] [*] [5] [0] [Enter]. Now, because the fixture was selected using the **Library** button, ShowMagic knows that the fixture requires 12 consecutive channels, so it automatically patches the GoldenScan to 12 consecutive channels starting from the channel supplied, i.e. channel 50. The channel range *050 - 061* is thus indicated under the Dmx Address title in the Fixture list as being patched to that fixture.

The four par cans are now assigned to fixture fader 1 and patched to channels *10*, *12*, *15* and *17*, and a single GoldenScan is assigned to fixture fader 2 and patched to DMX channels *50* to *61*.

Multiple Assignment and Patching Commands

For speed and convenience, ShowMagic offers features for assigning and / or patching multiple fixtures with a single command by using other keys such as [/] (on the numeric keypad) for 'Thru' and function key [F12] for 'Copy'. For instance, if you were using 10 GoldenScan HPE fixtures and you wished to assign these to fixture faders 1 through 10 on the desk you could do the following:

1) Click anywhere within the Fader list to select it. The highlight bar will then be shown in red to indicate that the Fader list is now active for editing. Press [Delete] [1] [/] [2] then [Enter] and you will be prompted to confirm the deleting of those two fader assignments (1 'thru' 2).

2) With the Fdr 001 row still highlighted select the Make **Clay Paky** Model **GoldenScan HPE** fixture using the **Library** button, then press [F12] [1] [/] [10]. This would display the command *Copy Fdr 1 Thru 10*. Pressing [Enter] to confirm this command would then assign copies of the fixture assigned to fader *1* (*GoldenScan HPE*) to faders *2, 3, 4, 5, 6, 7, 8, 9* and *10*. You now have 10 GoldenScans assigned to faders *1* to *10*, but they are not patched to DMX channels; the patching can be done for each fixture individually as previously described, or if their addresses are all set to be consecutive, they can all be patched with a single command:

    1) Let us say that you have physically set 10 GoldenScan 3 HPE fixtures to use consecutive start channels beginning with 1, i.e. 1, 13, 25, 37 etc and you wished to assign these to faders 1 through 10, this can be done in the following way:

    2) Delete fader assignments *2* through *10* by pressing [Delete] [2] [/] [10] [Enter] and this will leave you with one GoldenScan on Fdr 001.

    3) Press [F12] [1] [/] [10] [*] [1]. This will display the command *Copy Fdr 1 Thru 10 at 1*. Pressing [Enter] to execute this command would then assign the 10 fixtures to fixture faders *1 - 10* and also automatically patch them to their consecutive channels beginning at DMX channel 1.

Alternatively, pressing [F12] [1] [+] [9] [*] [1] [Enter] would *add* 9 more fixtures of the same type as Fdr 001, assign them to Faders ***002*** through ***010***, and also patch them consecutively beginning at channel 1.

Yet another way to assign and patch multiple fixtures is to assign a fixture to a fader, double-click on it's DMX Address, enter the start address for that fixture in the Address box but also type the number of copies you want in the Copy box. That number of fixtures will then be assigned to the faders and patched consecutively.

Function List

When a fader is highlighted in the Fader list, the functions for the type of fixture patched to that fixture fader are displayed here:

Function

Descriptions of the fixtures' functions are provided under this title e.g. ***Dimmer***, ***Color Wheel*** etc.

Pre

The precedence of each function on a fixture can be set independently of the overall precedence set for the desk (see "Recording and Playing Scenes - Fundamental Principles", p.45, for a full description of precedence on the desk). The default is ***DSK*** (desk precedence), but they can be set to ***NTP***, ***LTP*** or ***HTP*** by left / right-clicking on them whilst holding down the [Ctrl] key.

Please Note:

To control the dimming of scenes stored on action buttons with the action sub-master fader, the main dimming attribute must be set to ***HTP***.

Mn

The minimum DMX value for that function is shown under this title. The function fader on the fixture panel cannot go down any further than this and if the blackout button on the Master panel is used, this minimum value - not zero - is sent to the DMX channel. The Grand Master blackout (**GM**) button, however, will always send zero values to ALL channels.

The setting of minimum values can be useful if you want to ensure that certain functions on fixtures are never allowed to go fully off - such as the dimming level of fixtures that might be used for 'emergency' lighting.

Mx

The maximum value that will be output to that DMX channel. The default Mn and Mx values are ***00*** and ***FL*** (Full 100%) respectively but these can be incremented or decremented by right/left-clicking on the values whilst holding down the [Ctrl] key. When a fader is moved to its minimum or maximum level on the fixture panel it's value is shown enclosed in single quotes e.g. ***'10'***, ***'90'*** etc.

The setting of maximum values can be useful if you wish to conserve lamp life - a lamp that is regularly run at 100% brightness will not last as long as a lamp that is regularly run at 90%.

Ind

A DMX channel can be made 'independent' of the blackout (**Black**) button (on the master panel on the ShowMagic main screen). If set to ***Y*** then operating the **Black** button will not affect it. If set to ***N***, then operating the **Black** button will set this channel to its 'minimum' value, e.g. if a fixture's pan and tilt channels are set to ***Y*** they will not be affected when the **Black** button is used.

Inv

This ***Y*** or ***N*** flag indicates whether this function has been inverted or not. When a function is inverted the value becomes 100% when the function fader is down, and 0% when it is fully up.

Clicking or right-clicking on the Ind and Inv ***Y*** or ***N*** flags (with the [Ctrl] key held down) toggles them between ***Y*** and ***N***.

Profile

Different makes of lamps and dimmer packs have certain level characteristics. i.e. DMX values of 25% and 50% may not produce corresponding brightness levels of 25% and 50%. Some dimmers may reach an actual 25% brightness level with a DMX value of 35%, and at a DMX value of 75% the brightness level could be 73% and so on. These non-linear 'curve' characteristics are referred to as profiles and an appropriate profile can be selected by left/right-clicking on this item whilst holding down [Ctrl].

If ***Full@1, @10, @20, @30, @40*** or ***@50*** are selected, any value equal to, or higher than that percentage on that fader will produce 100% output. This can be used to make a channel on a dimmer pack a switching channel rather than a dimming channel - ideal if you are using a channel to supply mains power to physically turn fixtures on or off or to control motors.

Notes on Matching Fixture Fader Numbers to DMX Channels

When patching single channel fixtures (connected to switching / dimmer packs) to fixture faders, it is a good idea to assign those fixtures to faders that correspond to the DMX channels. E.g. If you are using a 24 channel dimmer pack set to DMX address *001*, the fixtures connected to that pack should be assigned to fixture fader numbers 001 to 024. You can then use the commands for setting faders when creating lighting scenes, and you know that the fixture fader numbers in those commands correspond to the DMX addresses. If the pack is set to address *51* or *201* or *351* etc. then you can still use fixture numbers 001 to 024 as it is easy to remember that the DMX addresses are all offset by *50*, *200* or *350* etc. For instance, on the fixture panel on the main desk screen, if you want to set channels *212* to *218* to 50% you can use the keystrokes - [1] [2] [/] [1] [8] [*] [5] [0] [Enter].

Notes on Overwriting DMX Addresses Already in Use

If you attempt to patch a fixture to a DMX address that has already been assigned to another fixture, you will be prompted to confirm this. On confirmation the DMX address on the other fixture will be cleared i.e. set back to *000 - 000*. You will then need to re-enter another address for that other fixture. This system ensures that no DMX cross-channel conflicts can be created.

Deleting Fader and Fixture Assignments

To remove a fixture from a fixture fader simply highlight the appropriate fader row, press the [Delete] key, press [Enter] to enter the command and then confirm or cancel on the dialogue box.

Please Note:
The fixture faders on the main desk fixture panel cannot be deleted; only assignments to those faders can be deleted. If a fixture fader is 'empty' the fader knob on the main desk fixture panel will be shown in plain black.

Multiple, consecutive fader assignments such as faders 4 through 10 can be deleted by pressing [Delete] [4] [/] [10] [Enter] and confirming on the dialogue box. Where a number of fixtures are assigned to a fixture fader, fixtures can be removed by selecting the appropriate fader row, highlighting the appropriate fixture and pressing [Delete] [Enter], the highlighted fixture will then be deleted from the currently highlighted fixture fader.

The Load Patch and Save Patch Functions

The patching of a desk can be loaded and saved (independently of **Load Desk** and **Save Desk**) using **Load Patch** and **Save Patch** from the patch screen's **File** menu. The **Load Desk** function will however overwrite any patch settings as **Load Desk** loads ALL the desk AND patch settings. **Load Patch** and **Save Patch** are very useful though for loading in the known settings for a venue prior to creating a new desk.

Making Fixtures

If you are using fixtures that are not included in the ShowMagic fixture **Library**, you can create a new fixture for a fixture fader and save it to disk so that you can still take advantage of ShowMagic's function icon display and control features. To create a new fixture do the following:

1) Highlight an 'empty' fixture fader row that you want to assign your new fixture to and click on the **Make** button to activate it. The top right fixture list is then temporarily changed into a Function List and a comprehensive list of functions is displayed.

2) Use the scroll bar to scroll through this Function List and select the first function (***Dimmer***, ***Color Wheel***, etc.) for your new fixture by dragging the function from the Function List display down onto the Function display below it. The dragged function will then be copied onto the first channel of the fixture. Dropping it anywhere else will simply cancel the operation.

3) Select and drag down the second function for that fixture. This will then be copied onto the fixture's second channel. Repeat the above for the rest of the functions for that fixture. If you have copied a function to the wrong channel offset then drop the correct function onto the channel and overwrite the old one.

4) When all of the functions have been copied to the new fixture (maximum of 48), left/right-click on the description to the right of the **Make** button (whilst holding down [Ctrl]) to select a fixture description. The icon for that type of fixture will then be shown on that fixture faders' slider on the fixture panel. Click the **Make** button again to de-activate it. The normal Fixture list will then be displayed.

5) Set the DMX start address for the fixture then double-click on its yellow label or fixture type label and you can now enter your own label and description for it if you wish. If a dimmer has been copied as a function, it will be set as the main dimming function for that fixture and its number is shown in yellow i.e. adjusting the fixture fader for that fixture on the fixture panel will alter this function's value. If you wish to make another function on the fixture the main dimming function then simply double-click on its number, with the [Ctrl] key held down, to turn it yellow.

6) If you wish to save the new fixture, make sure the fader row containing the new fixture is highlighted, select the **File > Save Fixture** menu item and save it with a name of your choice.

The Test Buttons: Fdr and Dmx

The **Fdr** and **Dmx** buttons can be used to test the physical fixtures assigned to fixture faders or test individual DMX channels respectively. Clicking on one of the buttons selects that particular test mode (only one can be on at any one time). Clicking again on a test button will turn it off and take the patch screen out of 'test' mode.

When the **Fdr** test button is on, the dimmer / shutter channel for the fader number currently highlighted is set to the value selected on the **Options > Dmx Test Level** menu item (default = 50%) so that the effect can be observed, e.g. if you had 2 Goldenscans assigned to fader 001, highlighting fader 001 (with the **Fdr** test button on) would turn on the dimmer channels (4th functions) for those two fixtures at their test levels. Also, because ShowMagic knows what channels need to be used to 'open' the beam (iris etc.) it opens these channels and also sets the pan & tilt channels (if any) to 50% so that the beam is centred for easy viewing.

Using the [Up] and [Down] cursor keys turns the last selected faders' dimmer channels off and the dimmer channels for the newly highlighted fader on, and so on until the **Fdr** test button is turned off.

When the **Dmx** button is on, the numeric keypad can be used to test any DMX channel directly, i.e. typing [1] [0] [Enter] will set DMX channel 10 to the test level and so on until the **Dmx** test button is turned off. Alternatively, the [Up] and [Down] cursor keys can be used to step through the DMX channels one by one.

When either of the test buttons is on, the fader or DMX channel being tested is shown in the Command - display.

The **Dmx** test button can be very useful as it enables you to test all the DMX channels at a venue if you do not have the information on the fixture channel set-up information for that venue. The results that you can note from the test can then be used to set up the correct address patches for that venue.

Load Fixture and Save Fixture Functions

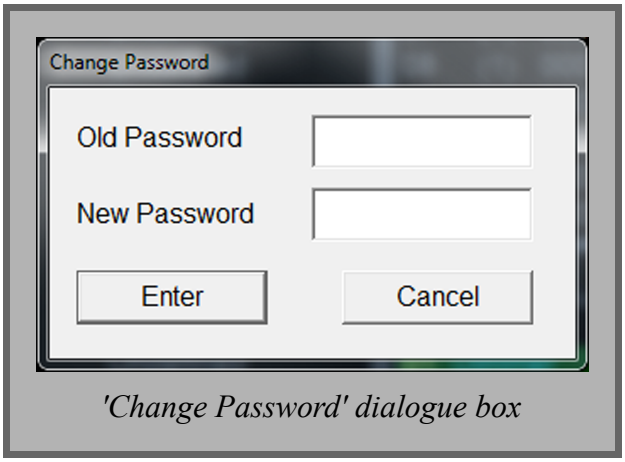
The functions **Load Fixture** and **Save Fixture** are available on the patch screen's **File** menu, and although a new fixture that is not contained in the fixtures library can be made and then saved using **Save Fixture** (as described above) this is by no means the only use of these functions; as the names suggest, the complete set-up and assignments for any fixture fader (either 'made' or loaded using the **Library** button), can be saved by highlighting that fader row and selecting **File > Save Fixture**, and later loaded in by highlighting the fader row that you wish to load it into and selecting **File > Load Fixture**.

The **Load Fixture** function combined with the multiple assignment and patching commands can save a lot of time when it comes to setting up a new desk before creating a show. For instance, if you had used 4 fixture faders on the desk, for a previous show, to control 4 moving head fixtures each and you had saved one of those faders with all its fixture assignments, you could do the following on a 'new' desk for a larger show requiring a similar set-up but for 8 fixture faders:

1) Highlight a fixture fader row in the Fader display.

2) Select the **File > Load Fixture** menu item and choose the fader set-up saved previously. You now have a fader instantly set up with all its 4 fixture assignments and Function list settings for each fixture (Min, Max, etc); the DMX patch settings are not of course saved as these invariably have to be set each time for different venues.

Now, for example, simply pressing [F12] [1] [/] [8] [Enter], i.e. *Copy Fdr 1 thru 8,* creates eight fixture faders, each with 4 fixtures assigned to them: that's 32 fixtures set up, and ready for DMX channel patching, in just two simple steps!



'Change Password' dialogue box

Change Password

Selecting the **Options > Change Password** menu item on the patch screen allows you to enter a password which can be used if you wish to 'lock out' access to the programming of the desk as described in "System Locked", p.160.

Initially, the password is blank and anyone can lock and unlock the desk using the **Options > System Locked** menu item on the main desk screen, but once you have entered a password containing alpha-numeric characters (not case sensitive) this password must be provided whenever you attempt to lock or unlock the desk.

To create a password:

1) Click in the Old Password box and type in the old password. If the password is blank (such as when this function is first used) then ignore the Old Password box and leave it blank.

2) Click in the New Password box, type in the new password that you wish to use, then click on the **Enter** button. The new password will then be stored. If no new password is entered (i.e. it is left blank) then the password will revert back to being blank when you click on the **Enter** button.

Auto Patch Fixtures

If the DMX addresses for your physical fixtures are set consecutively and in the same order as the fixture fader assignments on the patch screen then these can be patched automatically by selecting **Options > Auto Patch Fixtures** and confirming on the Auto Patch dialogue box.

System Menu

This menu can be used to check that you have the appropriate sound resources etc. correctly installed. You don't need to tick any items on the **System** menu; they are there just to show you what resources are available. If any sound resources are not available then check that your soundcard should possess them, and if so, use the Windows control panel to set them up correctly or re-install the latest soundcard drivers.

Direct Capture

Selecting the **System > Direct Capture** menu item will display the device on your soundcard that ShowMagic will use for the sound-to-light features. If **No Direct Capture** is shown then the sound-to-light features will not work. On-board soundcards or certain laptops may not have this capability so to use sound-to-light you will need to upgrade your soundcard, or use an external interface, that is Soundblaster compatible.

Notepad Menu

The **System Notepad** and **Desk Notepad** menu items can be accessed from the patch screen as well as from the main screen as described in "The Notepad Menu", p.161.

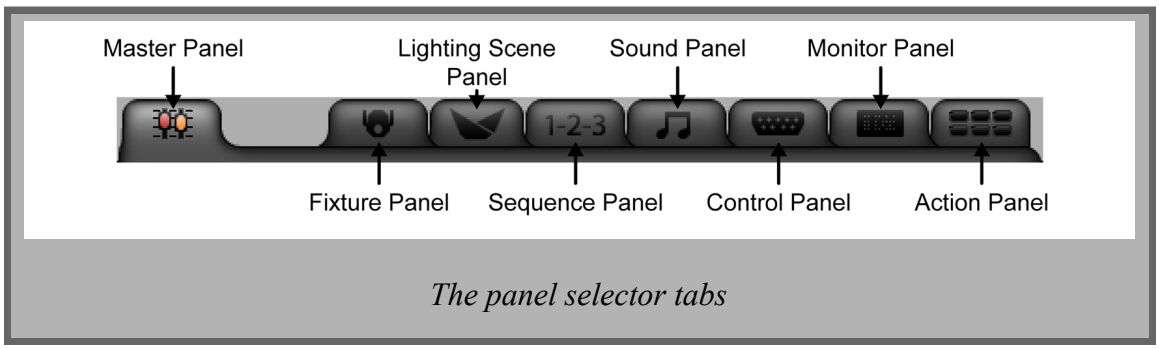
Section 4 - Main Desk Screen

Now that the patch screen has been described, the rest of this manual will be dedicated to the User screen ("User Screen", p.163) and the Main Desk screen that is described next and is accessed from the patch screen by selecting the **Options > Main Screen** menu item.

Main Desk Screen

The main desk screen is split into two panel areas which each cover half of the width of the screen. Eight panels are available that are designed to provide logical and easy access to the various features and facilities available on the desk.

The Master, Fixture, Lighting Scene, Sequence, Sound, Control, Monitor and Action panels can be accessed on either side of the screen by simply clicking on its tab at the top.



The panel selector tabs

The tabs are normally colored grey except when one is selected in which case its icon is shown colored.

Master panel selector tab

Fixture panel selector tab

Lighting Scene panel selector tab

Sequence panel selector tab

Sound panel selector tab

Control panel selector tab

Monitor panel selector tab

Action panel selector tab

Page buttons are used on the Fixture, Scene, Sequence, Sound, Control and Action panels as the number of faders / buttons that are available cannot all be accessed from a single panel. Event buttons and faders are therefore spread across a number of pages and the page buttons are used to select which page you require.

Page selector buttons

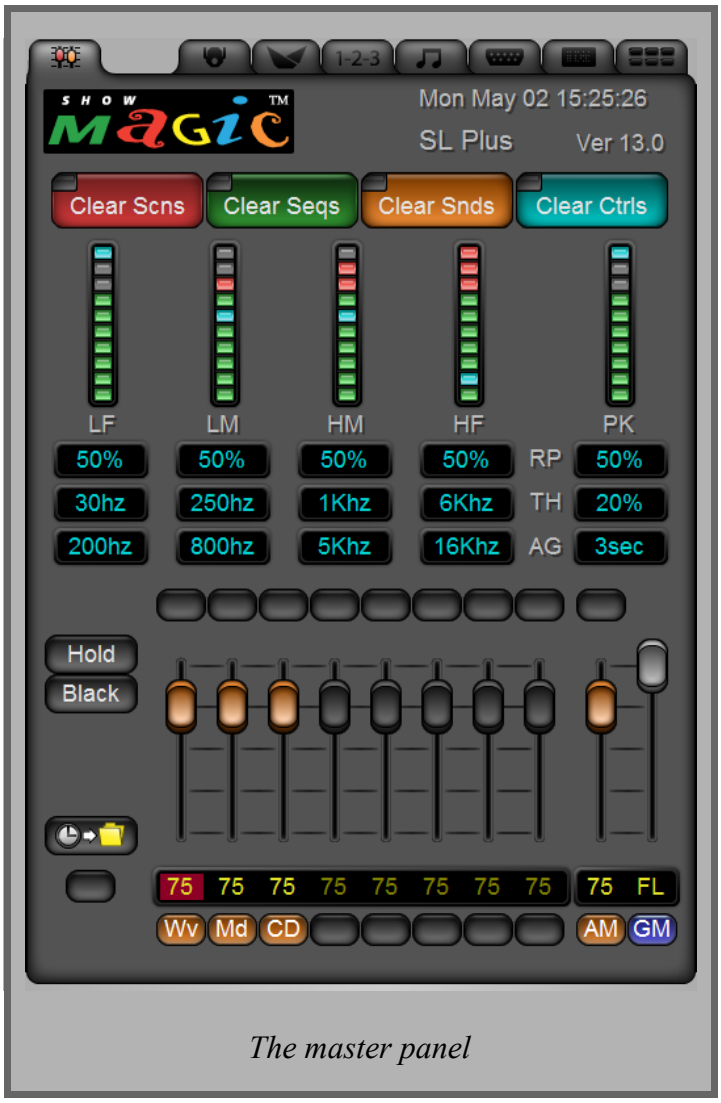
Where more than one bank of page buttons is available, bank buttons labelled *A, B* etc. (each containing a number of page buttons) are provided and this bank and page system provides a very handy way for you to organise events into logical groups for easy access:

Bank and Page selector buttons

A short label of up to 3 characters (however many will fit) can be applied to a bank or page selector button by double-right-clicking on the button and entering the label.

Each of the panels will be described in the following sections.

Section 5 - Master Panel



The master panel

Clear Buttons

The 'Clear' buttons

Double-clicking on the **Clear Scns**, **Clear Seqs**, **Clear Snds** or **Clear Ctrls** buttons will stop any lighting scenes, sequences, sound events or control events respectively that are running on the desk. Holding down [Ctrl] and double clicking on any one of these buttons stops ALL events. The button's LEDs are illuminated in green if any events of that type are running.

The top half of the Master panel contains a sound-to-light section.

Sound-To-Light Section

ShowMagic uses the wave record channel on a Soundblaster compatible soundcard for its sound-to-light features.

Please Note:
Some on-board sound for laptops and desktops do not have this facility.

The sound-to-light functions are not available for soundcards running ASIO drivers. However, if you are using a Soundblaster compatible soundcard AND a secondary, ASIO soundcard, then the input / output channels on the Soundblaster compatible soundcard can be used for sound-to-light.

If the sound-to-light selector above the **AM** fader is on (which selects 'What you Hear' - see below) then certain input channels may be automatically disabled (muted) if others are enabled. ShowMagic will indicate this on their mute buttons.

Please Note:
If you wish to open Line or Microphone inputs etc. all at the same time then the sound-to-light selector above the **AM** fader MUST NOT be on - click on any other sound-to-light selector instead. This is a limitation of soundcard hardware.

When music is playing through the ShowMagic desk the volumes of particular frequency bands in the music can be seen in 5 meters which are provided on the sound-to-light section - low frequency **LF**, low-mid frequency **LM**, high-mid frequency **HM**, high frequency **HF** and overall volume peak **PK**. These work in a similar way to the meters on an audio graphic equalizer. Bass and drum sounds tend to affect the **LF** and **LM** meters and other higher tone instruments tend to affect the **HM** and **HF**. The overall volume peak meter **PK** is affected by all the frequencies. The lowest and highest frequency for each frequency band can be selected between 30hz and 16Khz

The sound-to-light meters can be used to activate scenes in a lighting chase as described in "Sequence Settings", p.105, FX scenes as described in "FX Generator", p.63, and Colorscene frames as described in "ColorScene", p.74. A blue LED in each meter will be triggered (and will jump to the top of the meter) when the volume (shown as green LEDs) in that frequency range reaches a threshold (**TH**) selectable between 10% and 90% of the volume. This setting applies to all the meters. Any settings displayed in blue, such as the ones above, can be adjusted by holding down the [Ctrl] key whilst left / right-clicking on them.

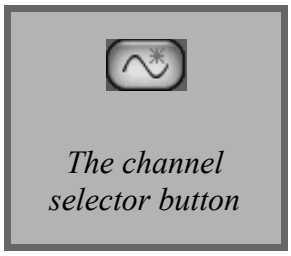
A response setting (**RP**) between 25% and 100% is also selectable for each meter independently and this determines how soon after a blue LED has been triggered that it can be triggered again.

100%	1/4 second
75%	1/3 second
50%	1/2 second
25%	1 second

When the blue LED has been triggered it falls back down at the selected response speed.

An auto-gain function is also implemented wherein the overall volume of the audio is checked by ShowMagic at a selectable period and the sensitivity of the meters is automatically adjusted to allow for consistency between loud and quiet pieces of music. The auto-gain period **AG** is selectable between 1 and 10 seconds.

Channel selectors



The channel selector button

Selecting the button above the audio master-fader (**AM**) selects all audio channels ('what you hear') to be used for triggering sound-to-light. Double-clicking on any other sound-to-light channel selector button situated above an audio channel fader selects that audio channel only to be fed exclusively to the sound to light section. This function doesn't usually work with on-board sound on desktop PCs and laptops due to hardware limitations.

See the **Audio Input Selector Button** in "Sound-To-Light Input Selector Button", p.31, for details on adjusting sound-to-light input levels.

Audio Output Sub-master Faders

The sub-master audio faders

Up to eight orange sub-master audio faders are available depending on the capability of your soundcard. These can be used to control the overall volume for each of the different audio types independently. Adjusting the first fader will affect the overall levels of all digital audio files that are playing, adjusting the second fader affects MIDI file levels and so on.

The audio levels are shown under each fader with mute buttons below them and each mute button is labelled to denote what type of sound events are assigned to that sub-master fader (if available on your soundcard); **Wv** for wave file output, **Md** for MIDI output, **Di** for digital input, **Ln** for line level input, and **Mc** for microphone input.

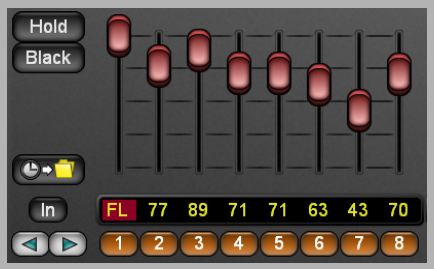
Multiple ASIO Audio Output Sub-master Faders

If you are using one or more multi-input / output soundcards with ASIO drivers, page selector buttons will appear below the audio input (**In**) selector button.

The page selector buttons

These buttons can be used to select the sub-master faders for the multiple ASIO output channels.

The ASIO channel sub-master faders are shown in red (to denote ASIO channels) with orange buttons (to denote output) labelled **1** to **8.**



The sub-master audio faders

The page selector buttons can be used to select sub-masters for all the available ASIO output channels.

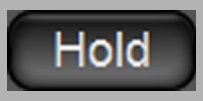
In the SL Free Edition, the number of ASIO output channel sub-master faders is limited to the first 8 output channels.

These faders can be adjusted to determine the overall volume of the ASIO outputs, and their orange buttons can be used to mute / un-mute the outputs by double-clicking on them.

Master Output Faders

An Audio Master fader (orange) is provided for controlling the master volume of all audio channels and double-clicking on the audio master **AM** button toggles mute on and off on all audio channels - as with all mute buttons it does not stop audio from playing, it simply turns off the output volume. A Grand Master fader is provided for controlling the master levels of lighting and double-clicking on the grand master **GM** blackout button sets ALL lighting channels to 0.

Hold Button



The hold button

Double-clicking on this button will hold the current DMX lighting state. This is useful if you want to load another desk but keep the current lighting state running temporarily. Similarly, if you are programming lighting scenes but need to maintain the current DMX output then this button can be used to program ‘blind’.

The blackout button

Blackout Button

Double-clicking on this button will set all lighting channels to their minimum settings as defined on the patch screen. It does not affect audio.

Auto-Save Button

The auto-save button

Double-clicking on this button toggles auto-save *On* or *Off*. When *On*, the button is displayed in red and the current desk is saved automatically every 5, 10 or 15 minutes depending on which duration is ticked on the **Options > Auto > Save** menu. **Auto-Save** can also be turned On or Off from this menu. Up to 10 **Auto-Save**'d desk files are saved in the *Desk* folder as *Auto_01.dsk* to *Auto_10.dsk* and their numbers wrap round as 1,2,3,4,5,6,7,8,9,10,1,2,3,4 etc. This allows you to revert back through up to ten **Auto-Save**'d files.

Sound-To-Light Input Selector Button

The input selector button

The levels at which each audio channel is fed to the sound-to-light section is adjustable by double-clicking on the audio input selector button - labelled **In** - situated on the bottom left of the Master panel. The **In** button is then displayed in red and the normal, orange audio output sub-master faders on the master screen are temporarily replaced by red, sound-to-light input level faders for any channels on the primary soundcard (with orange buttons labelled **Wv**, **Md** etc) that are available. These faders can then be adjusted to alter the level of that channel being fed to the sound-to-light section.

Please Note:
The red STL (Sound-To-Light) input level faders do not affect the output volume of those channels; they only affect the level of the audio going in to the sound-to-light section. When these are adjusted you will hear no difference, but the sound-to-light meters will react differently to that audio channel. Double-clicking on the red **In** button replaces the red input level faders with the normal, orange audio output sub-master faders again.

The sub-master faders with the input selector button activated

Section 6 - Fixture Panel

Fixture Faders

Each fixture fader (at the top of the panel) has a button below it showing its number and double-clicking on a button shown in blue (on) will turn it off (then shown grey). These buttons can be used to disable the fixture(s) assigned to that fixture fader which can be useful if a fixture develops a fault during a show; the DMX output is disabled (i.e. only zeros are sent) to any fixtures assigned to a fixture fader that is turned off irrespective of what scenes are running that may use that fixture.

The fixture panel

The DMX universe and start address of the currently highlighted fixture fader is displayed in pink below the large fixture fader number in the central display area.

A page of 12 fixture faders is visible on the fixture panel at any one time and individual fixtures or groups of fixtures (e.g. a bank of pars) can be assigned to these using the Patch screen. The numbers below each fader show the fader setting as a percentage. i.e. ***00*** to ***FL*** (Full 100%).

The fixture page selector buttons

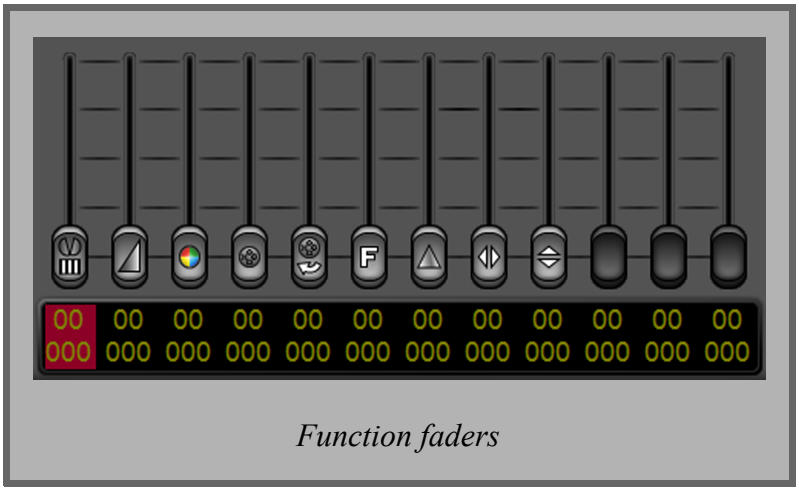
Page buttons, containing the number of the first fixture fader on that page, as it's initial label, are provided for access to any one of the pages of 12 faders. These buttons can be labelled using up to 3 characters (however many will fit) by double-right-clicking on them and entering the label e.g. you could use *sca* to denote scanners, *mh* for moving heads, *par* for par cans etc. The [Up] and [Down] cursor keys can also be used to scroll backwards or forwards through the fixture faders. The [Page Up] and [Page Down] keys can be used to select the previous page or next page respectively on any panels that contain page buttons. Similarly, the [Home] and [End] keys can be used to select the first and last pages respectively. 'Previous' and 'Next' bank selector buttons are provided at each end of the page buttons for selecting any 1 of 4 banks of 10 pages each, thus providing access to a total of 480 fixture faders.

The label for a fixture can be displayed down the left of the fader column using the **Options > Fixture Panel > Display Fixture Name** menu item.

Function Section

Single channel fixtures such as par cans can be fully controlled using just the fixture faders, but multi-channel 'intelligent' fixtures can have numerous functions, so the function section at the bottom of the fixture panel is provided as a means of accessing any function of a fixture.

Function Faders



Function faders

When a multi-channel fixture is assigned to a fixture fader and that fixture fader is selected (the value box below that fader is shown in dark red) all its functions, e.g. ***Pan***, ***Tilt***, etc. are displayed on the lower function faders with icons to denote its function. The primary 'light' function, e.g. ***Dimmer*** or ***Shutter*** is assigned to the fixture fader as well as its function fader, so the brightness for the fixture(s) can be controlled by either. The function fader values are shown below the function fader as a percentage. i.e. ***00*** to ***FL*** (Full 100%), and the actual DMX values ***0*** to ***255*** are also shown below that.

The [Left] and [Right] cursor keys can be used to scroll along (select) each function fader for that fixture.

Previous and next buttons

If a fixture possesses more than 12 functions the 'next' selector button below the Trackball illuminates to indicate that another page of functions is available. Clicking on this button displays the next page of 12 function faders and buttons. Clicking on the 'previous' button takes you back to the first page and so on.

Function Buttons

Function Buttons

As well as the 12 function faders, 12 function buttons are provided in the fixture section, which serve a dual purpose.

Selecting / Adjusting a Function

Clicking on a function button selects that function in the same way as clicking on that function's fader, but text descriptions are provided on the buttons rather than icons. Buttons can also be dragged up and down to alter the value for that function in the same way as dragging its fader up and down.

Selecting Function Presets

Over 1000 fixtures are available in the fixtures library and function presets for those fixtures are readily available. If the fixture panel is on the left of the screen, selecting a function and then holding down the [Shift] key will reveal a panel on the right containing preset buttons which provide instant access to all that function's presets. For example, if you load the *Demo* desk, click on fixture fader 5 for the *Stage Light 300*, then click on the ***Color Wheel*** function button and hold down [Shift] you would see the colour wheel presets on the right.

Clicking on the button labelled ***Orange*** for instance would then select orange on the color wheel and you will notice that the function fader moves to the correct value for that preset. The last preset selected for each function remains highlighted in blue with a red border until another is selected.

Using Key Activated Presets on the Fixture Panel

If you want to select the presets panel for the more common fixture functions there is a quicker alternative to selecting a function on the fixture panel and then pressing [Shift] to call up the presets panel for that function as described above.

Special keys can be used when the fixture panel is on the left hand side of the desk and a fixture (or group of fixtures) has been selected. For instance: by holding down the [D] key the main dimming function is selected in the function fader section of the fixture panel and the presets panel for that function will also appear on the right hand side of the desk; holding down [G] will select the gobo function and display that fixtures' gobo presets and so on.

[C] Color wheel. If more than one color wheel exists then this selects color wheel 1.

[D] Dimming function - dimmer, dimmer/strobe etc.

[F] Focus

[G] Gobo wheel. If more than one gobo wheel exists then this selects gobo wheel 1.

[I] Iris

[S] Shutter

[X] Effects

[Z] Zoom

Lee and Rosco Color Filters Presets for RGB / CMY Functions

If a fixture possesses red, green and blue or cyan, magenta and yellow functions then highlighting any one of these function faders and holding down [Shift] will produce a presets panel containing a list of Lee and Rosco filter numbers and labels. Clicking on one of these presets will set the three RGB (or CMY) function faders to the values to produce that color. These values are approximate as fixtures vary by make and model. Because there are so many Lee / Rosco presets, they are spread across a number of pages that can be accessed using the numbered buttons at the bottom of the panel.

Certain function-preset buttons are shown in white and these are used as labels for indicating the functions (depending on the fittings' dip switch settings etc.) of the preset buttons below them; they are not used to select anything, they are there purely for reference. To remove the presets panel simply take your finger off the [Shift] key.

The Trackball

The Trackball on the right of the function buttons can be used to alter both the pan and tilt settings of fixtures by simply holding down the left mouse button when the cursor is situated over the ball and then dragging the cursor up, down, left and right. Holding down the [Ctrl] key whilst dragging with the left mouse button on the Trackball, or on any fader, will alter the mouse movement sensitivity to enable finer adjustment. If you want to move the pan and tilt functions to their central positions (***50***) then simply double-click on the trackball. To clear the pan and tilt functions back to ***00***, double-right-click on the trackball.

The Trackball

If you want to move the pan and tilt functions to their central positions (***50***) and 'lock' them in that position (see "The Fader States", p.45, for a description of *Locked* mode), then double-click on the trackball whilst holding down the [Ctrl] key. To clear the pan & tilt functions back to ***00*** (and unlock them if they are *Locked*), simply double-right-click on the trackball.

Centre and Locate Buttons

Centre and locate buttons

As the **Centre** and **Locate** buttons are used specifically when recording scenes, and knowledge of the various fader modes (and the difference between ***Normal*** and ***Live*** mode) is required to understand them, they are described in the appropriate lighting scene section ("Using the Fixture Panel's Centre and Locate Buttons", p.57).

Color Box

The Color Box to the left of the **Centre** and **Locate** buttons displays the currently selected color when using a fixture's RGB or CMY function faders.

The color box

Please Note:
The fixture's main 'dimming function' level is also reflected in this box, i.e. if a dimmer function fader is at 0% the box will show black!

Grouping Fixtures

One or more of the twelve fixture faders on each page of faders can be grouped so that any adjustment to one fixture (when the group is turned on) also affects the other fixtures in that group. By grouping two or more fixture faders you can then select a gobo on one of the fixtures and the other fixtures in that group will also be changed to that gobo. This eliminates the need to set each fixture independently.

Fader Page Groups

The function keys [F1] to [F8] can be used to store up to eight group selections for each page of 12 fixture faders. When one of the keys is pressed to select a group it is shown in the display above the Trackball.

The current group

Pressing the function key again turns the group off.

Example:
As an example we will use the four par cans in the first page of fixtures on the demo desk. Let us say that you wish to create some scenes in which all the par cans are set to the same level, some other scenes in which alternate par cans 1 and 3 are the same and scenes in which alternate par cans 2 and 4 are set to the same. This can be done very easily by using group keys [F1], [F2] and [F3] in the following way:

1) Select the first page of fixtures (***1***-***12***) on the fixture panel. Press [F1] to select group ***F1*** and you will see the on/off buttons for all the fixtures displayed in red - this is the default for group ***F1*** on each page of fixtures until it is changed. We are only interested in grouping fixtures ***1*** to ***4***, so right-click on the on/off buttons for the other fixtures to remove them from the group - their buttons will then revert back to blue.

2) Now, whilst the F1 group is turned on (a large ***F1*** is displayed) moving any one of the *function faders* of the fixtures in that group will cause the other, same, function faders in the group to move also to that value.

3) Press [F2] to select group ***F2*** which is where we will store the alternate (1 and 3) fixture group, then right click on the on / off buttons for fixtures 1 and 3 and this will turn them red.

4) Press [F3] to select group ***F3*** which is where we will store the alternate (2 and 4) fixture group, then right-click on the on / off buttons for fixtures 2 and 4 and this will turn them red.

5) Finally, press the [F3] key to turn that group off.

We have now set up three groups for fixtures on the first fixture panel, so now to record any scenes using fixtures ***1*** to ***4*** simply press [F1] to select group ***F1***, move one of the function faders in that group to the required level (the other function faders will be set to the same), record the scenes (see "Recording Scenes", p.53) and then press [F1] again to turn the group off. To record scenes using alternate fixtures ***1*** and ***3*** press [F2] to select group ***F2*** and so on.

Fixture grouping affects all the functions of fixtures contained within the group, so moving the ***Color Wheel*** function fader (or selecting one of its preset buttons) will select that function setting for all other fixtures in that group. When initially setting up a desk, and assigning fixtures via the patch screen, it is a good idea to arrange the assignments to make use of fixture pages as the page group facility is specific to each page of fixtures.

Universal Groups

There is also a separate grouping function available where function keys [F1] to [F8] can be used to store another eight ‘universal’ groups which can affect ALL the fixtures on the desk, not just the selected page. To use one of these universal groups select a group (***F1*** to ***F8***) and then double-click in the display above the trackball. ‘Universal group’ mode is then selected and ***F1*** to ***F8*** above the trackball will be shown in pink rather than white. Double-clicking in the display above the trackball again reverts back to page group mode and ***F1*** to ***F8*** will then be displayed in white to denote ‘page group’ mode.

A quick way to include all 12 fixtures in a selected page group or universal group is to hold down [Ctrl] and double-click on the group number above the trackball - all the fixtures on that page will then be included in that group. A quick way to remove all 12 fixtures from a currently selected group is to hold down [Ctrl] and double-right-click on the group number - all the fixtures on that page will then be removed from that group.

Multi Button

The Multi button

Shown below the trackball, this can be used to view the currently highlighted function fader for all 12 fixtures on the page. For instance, if you highlight fixture fader 001, click on it's dimmer function fader and then click on the **Multi** button to turn it on (shown red) the 12 function faders for fixture 001 will be replaced by any dimmer function faders that are possessed by the 12 fixtures, with each dimmer fader appearing directly below its fixtures fader. If any of the 12 fixtures do not possess that function a blank fader is displayed.

The **Multi** button can be very useful for viewing and editing a particular function on all 12 fixtures on the page at the same time and it can be used in conjunction with the preset panel and the grouping feature.

Please Note:
When using dissimilar fixtures on the same page, the presets for the color function etc. could differ. If you group them together, highlight the color function for one of the fixtures, hold [Shift] and then click on a preset, all the color function faders will jump to that preset value (because the fixtures are grouped). However, you will find that the same fixture types as the selected fixture will display the color shown on the preset button but the other, dissimilar fixtures may display a different color for that preset value.

Setting Faders using Commands

In a similar way to assigning fixtures on the patch screen the key [/] = *thru* and the key [*] = *at*.

Using the numeric keypad, you can enter commands to set a number of single channel fixtures (such as par cans) to a specific value. E.g. typing [1] [/] [4] [*] [5] [0] [Enter] would set fixtures 1 to 4 to 50%.

A function can also be set for a number of fixtures using the keypad. e.g. if you had 4 GoldenScan HPEs assigned to fixtures 9 to 12, clicking on the **Color Wheel 1** function fader for any one of those fixtures to highlight it and then typing [9] [/] [1] [2] [*] [3] [5] [Enter] will set all the **Color Wheel 1** function values for fixtures 9, 10, 11 and 12 to *35%* (Color = Blue).

You can also use the [+] and [-] keys to include or exclude fixtures when setting multiple faders using the keyboard.

Example:
Here are some examples, assuming that you have patched 12 par cans to fixture faders 1 to 12:

- [1] [/] [9] [-] [6] [*] [5] [0] [Enter] would set fixtures 1, 2, 3, 4, 5, 7, 8 & 9 to 50%.
- [1] [/] [9] [-] [3] [+] [1] [1] [*] [7] [5] [Enter] would set fixtures 1, 2, 4, 5, 6, 7, 8, 9 & 11 to 75%.

ShowMagic stores the last command entered in a temporary buffer, so after using b) above if you were to just type [*] [8] [0] [Enter] fixtures 1, 2, 4, 5, 6, 7, 8, 9 and 11 would be set to 80%. Similarly if you were then to type [*] [7] [0] [Enter] this would set fixtures 1, 2, 4, 5, 6, 7, 8, 9 and 11 to 70% and so on.

The command stored in the temporary buffer is overwritten whenever you enter another command that doesn't start with [*].

You can also use commands to adjust fixture settings and re-record scenes whilst you are running a scene from within a ***Manual*** sequence. See "'Live Editing' of Scenes in a Manual Sequence", p.122, for more information.

Copying Fixture / Function Settings using Commands

The [F12] function key can be used to copy one or all function settings from one fixture fader to one or more other fixture faders that have the same type of fixtures assigned to them.

Example:

If you had 4 scanners of the same type assigned to fixtures 1 to 4 and had set up the pan, tilt, color etc. on fixture 1 and you then wished to copy one or more of those function settings to one or more of the other three fixtures, then this can be done in one of the following ways:

a) To copy one of the function settings to all the other 3 fixtures:

   1) First highlight the particular function that you wish to copy the settings from.

   2) Press [F12] once to select ***Copy Function***, the name of the highlighted function that you are about to copy will be shown in the function display.

   3) Press [1] to select fixture fader 001 (the fixture you are copying that function setting from).

   4) Press [/] then [4] followed by [Enter] to copy that function setting from fixture 1 through to fixture 4.

b) To copy one of the function settings to just fixture 3:

   1) First highlight the particular function that you wish to copy the settings from.

   2) Press [F12], the name of the function in question will be shown in the function display.

   3) Press [1] to select fixture fader 001 (the fixture you are copying that function setting from).

   4) Press [*] (at) then [3] followed by [Enter] to copy that function setting from fixture 1 to fixture 3. That function on fixtures 2 and 4 will not be affected.

c) To copy one of the functions to fixtures 2 and 4 but not 3:

1) First highlight the particular function fader that you wish to copy the settings from.

2) Press [F12], the name of the function in question will be shown in the function display.

3) Press [1] to select fixture fader 001 (the fixture you are copying that function setting from).

4) Press [/] [4] [-] [3] followed by [Enter] to copy that function setting from fixture 1 to fixtures 2 & 4, *but not* fixture 3 - as the key inputs [-] [3] excluded fixture 3 from the copy command.

d) To copy all of the function settings to the other three fixtures:

1) Press [F12] twice to select ***Copy Fader***.

2) Press [1] to select fixture fader 001 (the fixture you are copying all the function settings from).

3) Press [/] then [4] followed by [Enter] to copy all those function settings from fixture *1* through to *4*.

e) To copy all of the function settings to just fixture *3*:

1) Press [F12] twice to select ***Copy Fader***.

2) Press [1] to select fixture fader 001 (the fixture you are copying all the function settings from).

3) Press [*] then [3] followed by [Enter] to copy all those function settings from fixture 1 to fixture 3.

Pressing [F12] three times will cancel the ***Copy Fader*** command in the function display.

Clearing Fixture / Function Settings using Commands

The [Delete] key (to the right of the [Enter] key on the main keyboard) can be used to clear down function faders on one or more fixtures.

Please Note:
The [Del] key on the numeric keypad has a different function - being used to clear commands in the function display - see below.

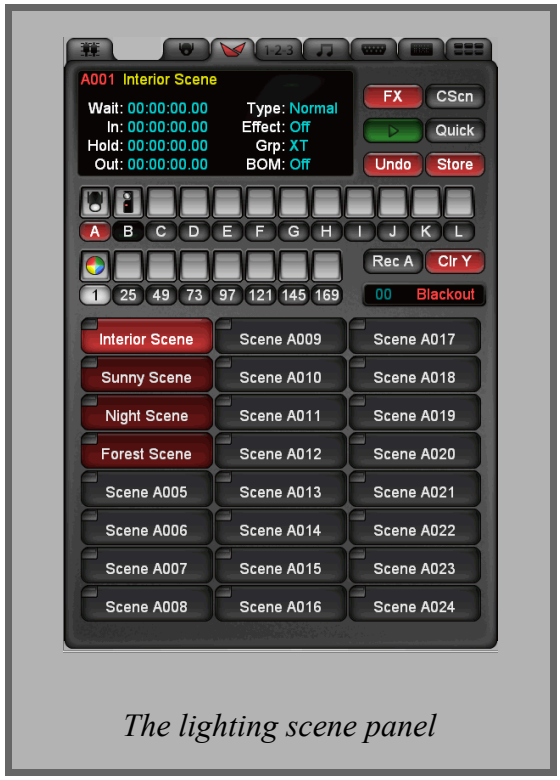
Example 1:
Highlighting a function fader, pressing [Delete] once followed by [1] [/] [4] [-] [2] [Enter] will clear just that function on faders 1, 3 and 4.

Example 2:
Highlighting any fixture fader, pressing [Delete] twice followed by [1] [/] [4] [-] [3] [Enter] will clear all function faders on fixtures 1, 2 and 4.

Pressing [Del] (on the numeric keypad) once will cancel any command in the function display.

Section 7 - Lighting Scene Panel

The lighting scene panel provides a scene details display window and a page of 24 lighting scene buttons. The scene buttons are shown grey when no lighting scenes have been recorded onto them, or they are shown in red when they contain a stored lighting scene.



The lighting scene panel

Using a similar system to the fixture panel, page buttons initially labelled with the number of the first scene on that page are provided for accessing any page.

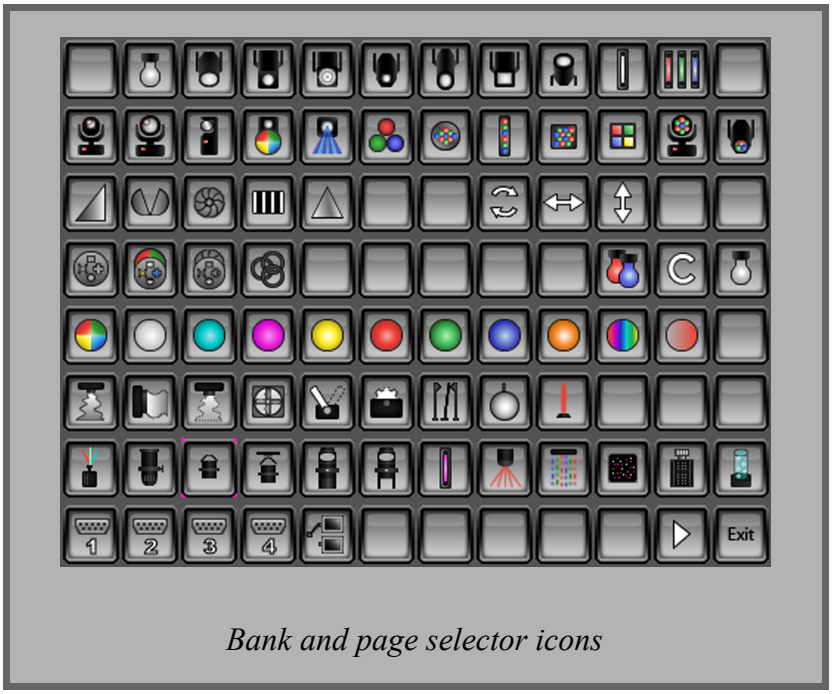
Bank selector buttons labelled *A, B* etc. are used for selecting any bank of pages, e.g. clicking on bank button *A* and then page button *1* will display scene buttons *A001* to *A024*, selecting the next page button *25* shows buttons *A025* to *A048* and so on. Bank and Page buttons turn dark grey if they contain any recorded scenes; medium grey indicates the Bank or Page is 'empty'.

You can apply a short label (1 to 3 characters) to any bank or page selector button by double-right-clicking on it and entering the label.

Applying Icons To Bank and Page Selector Buttons

If you wish to order your scenes into banks and pages then graphics can be selected for any of the boxes provided above the bank and page selector buttons for easy recognition. When you have created possibly hundreds of scenes for various fixtures a quick way of finding them is desirable. For instance you could use bank *A* for storing scenes related to scanners and you can apply a scanner graphic to that bank button to denote 'Scanner scenes'.

You could then subdivide bank *A* into different 'function' scenes for the scanners - bank *A*, page *1* (*A001* to *A024*) could be used for storing scanner gobo scenes and bank *A* page *2* (*A025* to *A048*) for scanner color scenes. A gobo graphic can be applied to the page *1* selector button and a color graphic to the page *2* button.



Bank and page selector icons

To apply a graphic to the box above a bank or page button simply double-click on the square button (above the bank or page button) and the scene buttons will be replaced with a selection of graphics:

Click on the graphic you require and this will be applied to the box above the button. If you want to blank out the graphic simply select a blank button from the graphics display. Clicking on the white, right-facing arrow at the bottom right will take you to another page of icons, clicking on the left-facing arrow will take you to the previous page of icons and clicking on the button labelled Exit, or right-clicking in the graphics display area, removes the icons display and shows the scene buttons again.

The [Up], [Down], [Left] and [Right] cursor keys can be used to scroll through the scene buttons. Pages and banks will automatically be scrolled through when boundaries are reached. The [Page Up] and [Page Down], keys can scroll through the pages and the [Home] and [End] keys can be used for selecting the first scene on bank *A* page *1* and the last scene on the last page of the last bank respectively.

A Blackout scene (scene *0000*) shown in the display below the Rec M and Clear Y buttons can be dragged from here into any sequences etc. This blackout scene can be used as part of a sequence (and set to ***XT***) to clear any scenes used in that sequence (see "Sequence Panel", p.105).

Scene Button LEDs

Each scene button has an LED that illuminates when that scene is running.

When a scene button that is off is double-clicked to run it manually, the LED will turn to half-bright green to indicate that the scene is in the process of coming on if any Wait and / or fade In times are set for it and then turn bright green when it is fully on.

When a scene button that is on is double-clicked to turn it off manually, the LED will turn to half-bright green to indicate that the scene is in the process of going off if any Hold and / or fade Out times are set and then it will go dark grey when that scene is fully off.

Red LEDs

When an LED is shown in red it indicates that the scene is being 'run' from another source e.g. a sequence is playing a lighting scene as one of its events. This red LED indicator also applies to buttons on the other event panels. The button LEDs provide an instant indication of the current running 'state' of events on those buttons.

Recording and Playing Scenes - Fundamental Principles

Before we go on to describe the other scene panel items, and the process of recording and playing back lighting scenes, it is important to understand the following as they all affect how lighting scenes are recorded and then played back:

Recording Scenes

- The different fixture fader 'States'.
- The setting of the lighting scene Rec (record) button recording mode.
- The setting of the Overwrite - Recorded Channels Only flag (accessed via the Rec button).

Playing Scenes

- How the system of 'desk precedence' works.
- The difference between ShowMagic's two operating modes - ***Normal*** mode and ***Live*** mode.

The Fader States

The Rec T - **Rec**ord **T**agged - recording mode (see next section) introduced in ShowMagic version 11, greatly simplifies the logic for what fader settings are recorded into a lighting scene and what fader settings are not recorded. Put simply, only the settings of function faders for a fixture (or group of fixtures) that have been 'tagged' will be recorded to a scene when the record button is set to Rec T on the lighting scene panel - irrespective of what faders have been 'moved' on the desk. When using the Rec M (**Rec**ord **M**oved) recording mode there are five possible fader 'states' that affect what fixture functions are recorded to new scenes.

a) *Locked*: the faders' percentage values (***00*** to ***FL***) and DMX values (***000*** to ***255***) are shown in white.

b) *Cued*: treated as *Moved* but the values are shown in bright yellow.

c) *Released*: the values are shown in dark yellow.

d) *Moved*: treated like *Cued* but the values are shown in bright blue.

e) *Edited Out*: the values are shown in dark blue.

Locked Fader

Faders can be set to *Locked* mode by holding down [Ctrl] and double-clicking on them (or anywhere within their fader column) - the values below the fader will then change from their current color to white to show that that function fader is *Locked*. *Locked* faders remain at that position and are not affected by any running scenes that try to move them. The settings of *Locked* faders are also never recorded to a scene. This is particularly useful if you want to record position scenes - you may want to see the beam to position it but you don't want to record the dimmer channel's 'open' state in those position scenes.

As an alternative to the above, the Rec T recording mode can be used and the pan & tilt functions tagged - in this mode only the pan and tilt channels' settings will be recorded to scenes - any other channels (shutter, color, gobo, etc.) are ignored. Double-clicking on a *Locked* fader, or anywhere within its column, with [Ctrl] held down unlocks it and it reverts back to its original state.

Cued Fader

The values of any faders contained in any scene(s) that are running them are shown in bright yellow to indicate that a scene has moved those faders. Any faders that are in a *Cued* state, at the time a scene is recorded in Rec M or Rec F recording modes, are recorded to that scene.

Released Fader

Faders can be set to *Released* mode by holding down [Ctrl] and double-clicking on them, or anywhere within their fader column TWICE - the values below the fader will then change from their current color to white, then to dark yellow, to show that it is *Released*. When faders are in *Released* mode their settings *are not* written to a scene when it is recorded (unless the record button is set to its Record by Fixture - Rec F - setting, as described below).

Though faders set to *Locked* or *Released* states are similar in that neither get recorded in scenes, they differ in that when the scene has been recorded the *Released* faders will return to ***00*** (if the clear button is set to Clr Y) whereas *Locked* faders will stay locked at their position.

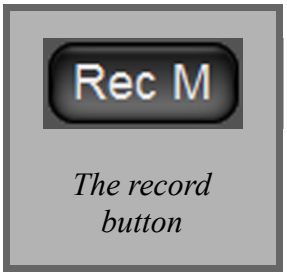
Moved Fader

When *Cued* or *Released* faders are moved manually by dragging them, their values are shown in bright blue to indicate that they have been *Moved.* When recording scenes in Rec M or Rec F modes the settings of any faders that are *Cued* by a running scene, or physically *Moved* by dragging, will be recorded to that new scene. In this way an existing scene or scenes can be run, adjustments can be made manually to them (and / or other faders can be added) and the combination of all those new fader settings can then be saved as a new scene.

Edited Out Fader

If you wished to create a new scene which was the same as another previously recorded scene but with maybe one or more of its fader settings removed, then running the original scene, holding the [Ctrl] key down and double-right-clicking on the faders, or anywhere in their columns, will take those faders out and their values will be shown in dark blue to indicate they have been *Edited Out*. The record button (in Rec M mode) can then be used to record the new scene to whatever scene button you wish, and the settings of any *Edited Out* faders will not be recorded to that scene.

Record Button - The Different Recording Modes



The record button

This button is used to record the settings of selected fixture function faders to a selected scene event button. There are up to four different recording modes available for the lighting scene record button - Rec M, Rec T, Rec F and, if any DMX input devices are selected in ShowMagic, Rec S.

These various recording modes are selected by right-clicking on the record button and selecting one of the following from the pop-up menu:

Rec M

Short for **Rec**ord **M**oved - the default mode. When set to this recording mode, all faders that are in a *Cued* or physically *Moved* state are recorded to a scene when the record button is used.

Rec T

This is short for **Rec**ord **T**agged. When set to this recording mode the background color of the function buttons in the centre of the fixture panel default to blue. Right-clicking on a function's button on the fixture panel will toggle that button between blue and red.

The state of any functions, for any fixture (or group of fixtures) that have been 'tagged' in red will be recorded to a scene when the record button is used (set to Rec T) - even if they are at ***000***. The only exception to this is if a tagged function fader has been *Locked* either manually, or by running a ***Safe*** scene (see "Scene Details Display", p.51).

All other un-tagged functions are not recorded - even if they have been moved manually or have been moved by a currently running lighting scene (*Cued* state).

If you hold down [Ctrl] whilst double-clicking on the scene panel's clear button (labelled as Clr Y or Clr N), then the desk is cleared down as normal, but all tagged function buttons are also un-tagged as well.

Rec F

This is short for **Rec**ord **F**ixture. When set to this, the state of ALL the function faders for a selected fixture (or group of fixtures) - even if they are at ***000*** - are recorded to a scene.

This recording setting is most commonly used with the ***Live*** operating mode whereby, when the scene is run, you know that ALL the function faders will go to the settings recorded in that scene irrespective of what scenes (that might be using some of those functions) were run beforehand.

Overwrite - Recorded Channels Only Option

If you right-click on the scene panel's Rec button you will see an Overwrite - Recorded Channels Only option. The setting of this only has an effect when you are *re-recording* (overwriting) scenes. If this is ticked, then only the channels that were recorded in the original scene (that you are now overwriting) will be re-recorded to that scene. In this case the recording mode of the Rec button (RecM, RecT etc.) is ignored. This feature is particularly useful when using the 'Live Edit' feature described in "'Live Editing' of Scenes in a Manual Sequence", p.122.

Desk Precedence

Makes and models of hardware lighting desks differ in their operating 'logic'- some operate using what is called 'latest takes precedence' logic, others operate using 'highest takes precedence' logic and so on.

For flexibility, the ShowMagic 'virtual desk' enables you to select any of the three types of precedence logic that will now be described:

When a number of lighting scenes are running (that are using one or more of the same DMX channels) the way in which the output values to those DMX channels is determined is called the 'precedence'.

The three types of precedence are:

a) 'None take Precedence' (NTP)

b) 'Latest takes Precedence' (LTP)

c) 'Highest takes Precedence' (HTP)

To best explain how these different precedences work we will use an example in which:

- In scene 1 - channel 1 is set to 50%, channel 2 is set to 25%.
- In scene 2 - channels 1 and 2 are both set to 30%.
- Both scenes are running with scene 1 being run first, followed by scene 2.

None (NTP)

When the desk is set to this option, no scene's settings takes precedence over any other scene. The values for any running scenes sharing the same channel outputs are simply added, or 'piled' one on top of the other, to produce a compounded output value for those channels up to the maximum percentage value of ***FL*** (Full = 100%), or DMX value of ***255***.

Example:

Channel 1 is at 80% i.e. 50% (set by scene 1) + 30% (set by scene 2).

Channel 2 is at 55% i.e. 25% (set by scene 1) + 30% (set by scene 2).

Latest (LTP)

When set to this option, the latest scene takes precedence. The values stored in the latest scene that is run will be used as the output values for any shared channels.

Example:

Channel 1 is at 30% (set by scene 2) - the latest scene that was run.

Channel 2 is at 30% (set by scene 2) - the latest scene that was run.

Highest (HTP)
When set to this option, the highest value stored, in any of the running scenes, for a particular DMX channel will take precedence.

Example:
Channel 1 is at 50% (set by scene 1) - higher than the 30% of scene 2.

Channel 2 is at 30% (set by scene ***2***) - higher than the 25% of scene 1.

The general precedence for the ShowMagic 'virtual desk' can be set, using the Options > General Settings > Desk Precedence menu item to: ***None (NTP)***; ***Latest (LTP)***; or ***Highest (HTP)***.

However, the precedence for each function on each fixture (i.e. each DMX channel), can also be set independently on the patch screen to: ***DSK*** - same default precedence as selected for the desk (see above); ***NTP***; ***LTP***; or ***HTP***.

Please Note:
To control the dimming levels of scenes stored on action buttons with the action button's sub-master fader, the main dimming attributes for the fixtures in those scenes must all be set to ***HTP*** on the patch screen.

'Normal' and 'Live' Modes

ShowMagic has been designed to offer a complete solution for any 'lighting desk' or 'show control' application. Traditional theatre desks tend to use a 'program the scenes' then 'manually trigger them from a set cue list' method of operation, Show Controllers use a 'program, run and walk-away' automated method of operation, and Live Performance desks use a 'program, then play-as-I-want, on-the-fly method of operation.

Each of these applications has it's own disciplines, methods of creation, and methods of operation.

For this reason, all types of scene creation have been supported, all three precedences have been made available and two different types of logic - for how scenes are run and how they are turned off - are also available in ShowMagic using the ***Normal*** mode and the ***Live*** mode.

The ***Normal*** mode was devised as a system whereby scenes could be turned on and the DMX channels used in those scenes were adjusted accordingly. When those scenes were turned off the DMX channels used in those scenes would then be brought back down to ***00*** (assuming that no other scenes were still running that used those channels). In this mode, you could determine the state of the DMX channels solely by seeing what scenes were left running at any given time. This 'on is on' and 'off is off' approach makes it far easier to program automated or randomised lightshows. This mode is also ideal for running automated lightshows in different areas at the same time as you can program (pre-determine) exactly what is on and what is off in any area, at any time.

In ***Live*** mode you can use ShowMagic in a more 'on-the-fly' manner using a similar logic to popular 'Live Performance' lighting desks. Put simply, when a scene is run the DMX channels are adjusted accordingly (as in ***Normal*** mode), however, when that scene is turned off the channels set to ***LTP*** remain in their last state because no *Latest* scene has been run to change them. If you want to

bring an ***LTP*** channel back down to ***00*** you must run a scene that includes that channel recorded at ***00***. However, any channels set to ***HTP*** return to ***00*** as there is no scene left running that is pushing that channel higher than ***00***.

Another way of explaining the difference between the ***Normal*** and ***Live*** modes is:

Normal mode - what you get for each channel is the result of what scenes *are currently running* for those channels (allowing of course for NTP, LTP or HTP precedence).

Live mode - what you get for each channel is the result of what scenes *were last run* (that use the channels set to LTP precedence) and the brightness level of any fixtures is dictated by any currently running scene(s) that set the highest 'brightness' levels for those fixtures using HTP.

Live mode is selected by ticking the Live Mode > On item in the Options > General Settings menu.

Normal mode is selected by un-ticking the Live Mode > On item.

Summary of the Different Recording Modes

Before we move on to the other scene panel items, and the process of recording and playing back lighting scenes, it is a good idea to re-cap, and summarise, the different types of recording modes because a proper understanding of them is required to make the most of ShowMagic's features and achieve the desired results.

There are four main scene-recording modes in ShowMagic:

a) **Record Moved** (the default) - shown as Rec M on the scene panel's record button.

   In this mode the settings of all lighting fixture faders that have been physically moved, or *Cued* by a running scene, are stored in a scene when it is recorded.

b) **Record Tagged** - shown as Rec T on the scene panel's record button.

   In this mode only the settings of lighting fixture faders that have been tagged are stored in a scene when it is recorded - irrespective of what faders have actually been moved.

c) **Record Fixture** - shown as Rec F on the scene panel's record button.

   In this mode the settings of ALL the function faders for selected fixtures are stored in a scene when it is recorded - even if those function faders are at ***00*** or have not been moved.

d) **Record by Sniffing DMX** - shown as Rec S on the scene panel's record button.

   In this mode the DMX values for the grouped fixtures are recorded from the incoming DMX signal via DMX input.

A recording mode is selected by Right-clicking on the scene panel's record button and selecting one of the items on the pop-up menu.

When operating in Rec T mode, the background color of the function buttons on the fixture panel default to blue (un-tagged). To tag functions (so that only their settings will be recorded) you simply Right-click on the required function button(s) to turn them red (tagged) or blue (un-tagged).

Double-clicking on the scene panel's clear button (labelled as either Clr Y or Clr N) will clear all fixture faders back down to 00. When using the Rec T recording mode, tagged functions are not un-tagged when the clear button is used, unless you hold down [Ctrl] when double-clicking on the clear button.

Before creating and recording a scene in Rec M and Rec F modes it is good practice to 'clear' the desk first to ensure that all the faders are in *Released* mode and at ***00***. This is where the Clear button comes into play.

Clear Button

Clear button

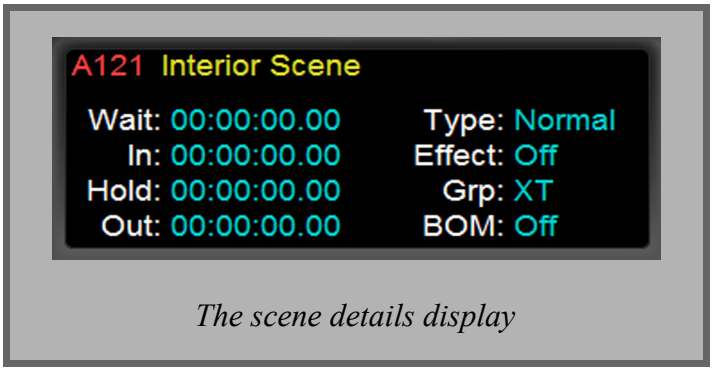
Double-clicking on the Clr button will clear any fixture fader settings on the desk (except *Locked* faders) and it will also turn off any running scenes (except ***Safe*** scenes - see Type below). If you hold down [Ctrl] whilst double-clicking on the Clr button it will also unlock and clear any locked faders (except faders locked by running ***Safe*** scenes). This provides a clear desk on which to create new scenes.

There are two settings for the Clear button - Clr Y and Clr N **-** and these settings effect what happens to any running scenes and fixture fader settings on the desk when you record a scene. You can change this setting by right-clicking on the button and selecting one of the following from the pop-up menu:

Clear on Record Yes - When selected, the desk is automatically cleared down each time you record a new scene. This is useful if you are recording dissimilar scenes and you want to start with a clear desk each time.

Clear on Record No - When this is selected, the desk is not cleared down automatically each time you record a scene, you need to double-click on the Clr N button to clear the desk. This is useful if you are recording similar scenes and you want to leave them at their last settings and then make fine adjustments to those settings when recording each new scene.

Scene Details Display



The scene details display

When a scene is highlighted, by clicking on its button, its details are shown in the details display.

The unique scene number (*A001*, *B023* etc) is shown at the top along with the label for the scene. Unlike the other event panels, the details in the details display for lighting scenes are changed by means of an Edit Scene dialogue box that is produced when you click on any of the blue items.

The following time values are shown in Hours, Minutes, Seconds and Frames i.e. *hh:mm:ss.ff,* and can be set to up to 23 hours, 59 minutes, 59 seconds and 24 frames - *23:59:59.24* - i.e. 1 day.

Wait The time that the scene will wait before fading in after it has been run is shown to the right of this title. If set to *00:00:00.00* then the fade up starts immediately on running the scene.

In The time that it takes for the faders to reach that scene's settings. If *00:00:00.00* is set then the faders reach the values set for that scene instantly.

Hold The time that the scene settings are held before fading out when the scene is de-activated.

If set to *00:00:00.00* the scene will start to fade out (or go off if no Out time is selected) immediately.

Out The time taken for the faders to fade out. If *00:00:00.00* is set then the faders change instantly.

Type A scene can be set to ***Normal*** or ***Safe***. If set to ***Safe***, its button will be shown in blue with a red border and it will not be affected by the use of any Clear or Black buttons - it can only be turned off by double-clicking on its button again. This allows any essential scenes for background lights etc to be protected from being turned off inadvertently. The GM button on the master panel, however, will always set every channel to 0 (off) during the time it is activated, though the scenes themselves may still be left running.

Effect This effect setting can be toggled between ***Off*** or ***Flash***. If set to ***Off*** then the scene will come on and will stay on until it is turned off manually or in a sequence. If set to ***Flash*** then the scene will remain on for the period set for Hold, if any, then it will go off. If Hold is set to *00:00:00.00* then it will still flash on, then off, instantly. A shape can also be applied to a lighting scene - making it an FX scene that would then be displayed here - using the FX generator described in "FX Generator", p.63.

Grp When scenes are dropped into sequences (as described in "Creating Sequences", p.111), the group setting for that scene - ***EX***, ***XA***, ***XT***, ***LA*** or group and sub group letters ***A***, ***Bc*** etc. (shown in blue) will default to this setting.

BOM Blackout-On-Movement - This can be set to ***Off*** (the default) or a value between ***1*** and ***25***.

If set to a value of ***1*** to ***25*** frames: When fading in, that time value is added to the fade-in time before the main dimming function (dimmer, shutter etc.) snaps on to the level recorded in that scene; When fading out the dimming function will instantly snap to ***000*** when that scene starts to fade out.

This allows the pan / tilt / gobo / color etc. to reach its correct setting before the beam is turned on, even if no fade times are used.

Please Note:
The main dimming function fader(s) on the fixture panel will appear to fade in / out as normal, but the actual DMX values being sent will follow the BOM settings - as can be viewed on the Monitor panel with the DMX button selected.

The Type, Effect, Grp and BOM settings above can be changed by clicking anywhere in the details display and using the appropriate drop-down menus on the Edit Scene dialogue box that appears. The scene's label can also be edited by clicking within the Label window on the dialogue box.

Recording Scenes

To record a scene, do the following:

1) Select the fixture panel on the left side of the desk and the scene panel on the right.

2) Set up all the faders that you wish to record as a scene. In the example below we have recorded a scene for the *Stage Light 300* fixture on the demo desk.

3) Use the bank and page buttons on the scene panel to select the page containing the scene button (scene number) that you wish to record the settings to.

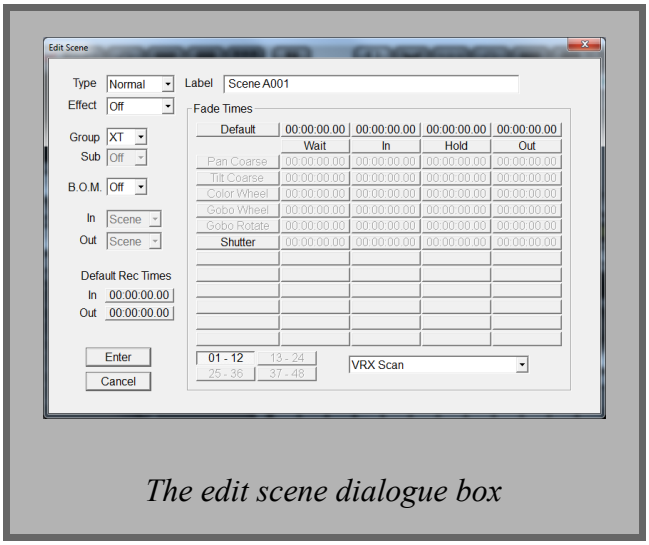
4) Activate the Rec button by clicking on it (it will flash) then click on the desired scene button; the scene will then be recorded to that scene number and the Rec button will be de-activated. If the scene number already contains a recorded scene then you will be prompted to confirm the overwrite. Click OK to overwrite the scene or Cancel to cancel the operation; both options de-activate the Rec button.

Setting Fade Times for a Scene

With a scene recorded to a scene button (the button is shown in red to indicate that a scene has been recorded to it), you can now set the fade times for that scene:

1) Click on the scene button to highlight it in a light red - its details are then shown in the details display at the top of the scene panel.

2) Click anywhere in the details display and an Edit Scene dialogue box will appear.

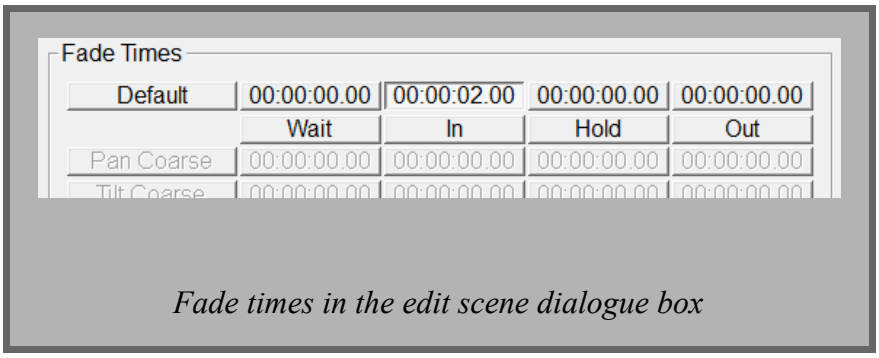


The edit scene dialogue box

The In and Out values under Default Rec Times on the dialogue box can be used to select default times that will be set on each scene automatically as it is recorded. The default times can of course be changed on each scene later in the normal way.

Default - Wait, In, Hold & Out times can be set as the default for all the fixture functions stored in that lighting scene. Simply click on the appropriate box (the box will then be shown 'pressed down') and type in the time that you want in minutes, seconds and frames.

Example:



Fade times in the edit scene dialogue box

Here we have entered a Default fade In time of 02 seconds and 00 frames by typing [2] [0] [0]. Now if you press [Enter] on the PC keyboard that value will be stored as the default fade In time for that scene.

Follow the same procedure to enter any time values you want for the Default - Wait, Hold & Out times, then click on the Enter button on the Edit Scene dialogue box to remove it. You will notice that the default times that you have set will then be displayed in the details display.

Now if you run that lighting scene by double-clicking on its button you will see all the function faders on the fixture panel fade up to the values stored in that scene over the time that you have set for the fade *In*. If you double-click on the scene button again (to turn it off) you will see the function faders on the fixture panel fade down over the time that you have set for the fade Out.

Multi-Part Scenes

This facility enables you to:

a) In ***Normal*** mode - Set different Wait, In, Hold & Out times for each function of each type of fixture that is recorded in a scene, rather than them all using the same Default fade times.

b) In ***Live*** mode - Set different Wait and fade In times for each function of each type of fixture that is recorded in a scene - Hold & Out times are not applicable in ***Live*** mode.

All function faders default to using the Default time settings shown in the details display UNLESS they are edited independently on the Edit Scene dialogue box. Most of the time most of the function faders will want to either snap on/off instantly, or fade in/out together at the same rate when the scene is run. However, in some cases you may want to set particular function faders to fade in/out at a different rate to the rest of the functions stored in that scene. For this reason it is quicker and easier to use overall Default settings and then just change the times for any functions that need to have different times to the rest.

Example: Let us say that we want to record a scene for the Stage Light 300 as above with Default fade In and fade Out times of 2 seconds for most of the functions, but we want the gobo and color wheel functions to snap on instantly when the scene is run (rather than fading in) and we also want the pan and tilt functions to fade in over 4 seconds rather than 2.

1) Record the scene by setting the function faders on the fixture panel to the values you want to store in the scene.

2) Click on the details display to call up the Edit Scene dialogue box.

3) Set the Default In and Out times to 2 seconds as described above.

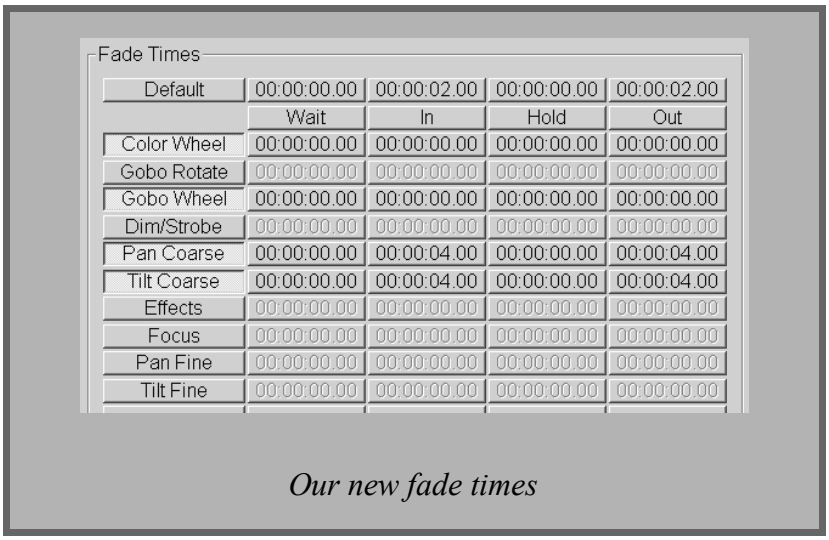
4) Click on the ***Color Wheel*** button (below the Default button on the Edit Scene dialogue box) - the button will appear 'pressed down' and its Wait, In, Hold and Out value buttons will be activated for the color wheel. The values are shown in black (rather then being greyed out) to indicate that they are being used instead of the Default times. These times are initially set to *00:00:00.00* and that is what we want for that function, i.e. no fade time - snap on and off.

5) Repeat step 4 above for the ***Gobo Wheel*** button.

6) Click on the ***Pan Coarse*** button and the Wait, In, Hold and Out value buttons will be activated for the Pan. Click on its In time button and enter [4] [0] [0], and do likewise for the Out time button.

7) Repeat step 6 above for the ***Tilt Coarse*** fade time buttons.

8) Click on the Enter button on the dialogue box to set those times.



Our new fade times

Now if you run that scene, the gobo and color functions will 'snap' to the settings stored in that scene, the pan and tilt will fade in over 4 seconds and all of the other functions stored in that scene will fade in over 2 seconds (the Default settings).

Sub Master Control

Although it is good programming practice, when running ShowMagic in ***Normal*** mode, to record separate scenes for each of a fixture's (or group of fixtures) functions so that you can then easily mix and match them in different sequences, there may be times when you want to record all the functions as a single scene. One example of this might be that you want to be able to run the scene from the action panel - either directly or by using sliders on an external DMX desk and use the action button sub-master fader (or external slider) to manually bring in that scene and adjust its level etc.

For scenes containing single channel fixtures this is no problem, the sub-master fader for the action button containing the scene will control the level of the dimmers for those generic fixtures. However, if you were using intelligent fixtures in the scene this might not be ideal - as you move the fader the dimmer will scroll up to the limit set by the fader which is OK, but all the other functions - pan and tilt, color, gobo etc. - will also scroll up to that limit, which is seldom what is wanted. It is more likely that you would want certain functions to snap to their scene settings instantly, other functions to fade to their scene settings over a fade time, and manually control just the dimmer level with the sub-master fader. This is where the Sub-master control comes into play.

The level of the sub-master fader (on an action button to which a scene has been assigned) will control the level of any functions recorded in that scene that are set to HTP on the Patch screen.

If a function is set to LTP that function will not be controlled by the level of the sub-master fader - it will just fade in if the sub-master fader goes above the LTP trigger level (initially set to 00%), or fade out if the sub-master fader goes below the LTP trigger level. The LTP Trigger level can be changed using the Set Action Trigger dialogue box.

Example:
Let's assume the scene's default fade-in and fade-out times are 2 seconds, the color and gobo functions are set to snap and that scene is assigned to an action button. Dragging up the sub-master fader for that action button will run the scene - the pan and tilt will fade to their recorded settings over 2 seconds, the color and gobo will instantly snap on to their settings and any manual adjustment of the sub-master fader will determine the level of the main dimmer function (HTP) setting recorded in that scene.

When operating in ***Normal*** or ***Live*** mode - if the sub-master fader is dragged down, the dimmer level will follow the sub-master fader level.

When operating in ***Normal*** mode - if the fader reaches ***00*** the scene is told to go off so the color and gobo will snap off instantly and the pan & tilt will start to fade out over 2 seconds.

When operating in ***Live*** mode - if the fader reaches ***00*** the scene is turned off, but the all functions not set to HTP will remain in their current position.

Recording Scenes With Sub Master Control

If you record a scene, whilst using sub-masters to control the overall levels of running scenes, the scene being recorded will take account of the current levels of any channels being controlled by the sub-master(s). In this way what you see (level-wise) will be what you get when you later run that recorded scene.

Using the Fixture Panel's Centre and Locate Buttons

In a similar way to double-clicking on the fixture panel's trackball to move pan and tilt channels to their central position, the Centre and Locate buttons on the fixture panel offer even more features to assist in creating scenes.

Please Note:
The Rec F feature - described in "Record Button - The Different Recording Modes", p.47 - offers an easier alternative to using the Locate button described below. The Rec T feature - described in "Record Button - The Different Recording Modes", p.47 - offers an easier alternative to using the 'Flashing and Releasing a Scene' method described below. The Locate button and 'Flash and Release' features have been retained to be backwards-compatible with the original 'record moved' (Rec M) system to suit users who are used to using it.

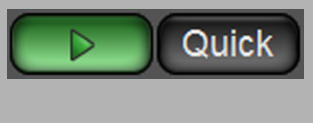
Centre
By double-clicking on this button, the pan and tilt functions on the currently highlighted fixture (or group of fixtures) are centred at 50%, and any functions needed to 'open' the beam (dimmer, shutter etc.) are set to their open position. These faders are also all set to 'moved' mode - ready for recording using Rec M.

If you are recording scenes for gobo, color etc. and you wish to centre and open the fixtures so you can see the beams, but you do not want these functions recorded into the scenes (using Rec M), then you can lock these functions by holding down [Ctrl] whilst double-clicking on the Centre button.

Double-right-clicking on the Centre button unlocks those function faders, moves them back down to ***00*** and puts them in the *Released* state.

Locate
This is used in the same way as the Centre button. However, all of the function faders for that fixture(s) are set to a 'moved' state, so if a scene is then recorded using Rec M all the functions are recorded to that scene.

Play and Quick Buttons



Play and quick buttons

Scenes can be previewed sequentially by clicking on the scene button for the first scene that you wish to preview; this will highlight the button, and clicking on the Play button, or pressing [Spacebar] if the scene panel is on the left, will activate that scene and the next scene button will become highlighted ready for previewing when the play button is clicked again, or [Spacebar] is used, and so on.

Scenes are thus automatically incremented so that any number of numerically sequential scenes can be previewed easily.

Please Note:
If two panels containing Go or Play buttons are displayed on the desk at the same time, the panel on the left is the 'Spacebar active' panel that pressing [Spacebar] will affect. This means you can be triggering events on the left panel with the [Spacebar] whilst selecting panels and clicking Go or Play buttons with the mouse on the right hand side at the same time.

Clicking on the Quick button will toggle the button on and off. When set to 'on' it is shown in red, when 'off' it is grey. If the button is on when the Play button is clicked, or [Spacebar] is used, any Wait, fade In, Hold and fade Out times set for the scenes are ignored enabling quicker testing of scenes.

Undo and Store Buttons

Undo and store buttons

A temporary store buffer provides a means of undoing any mistakes that may be made when performing lengthy scene programming tasks.

For instance you might be creating a scene that uses dozens of intelligent fixtures with all their functions set differently.

Clicking on the Store button regularly (such as after setting up a number of fixtures so far to your satisfaction) would have stored the settings and state of all the faders changed *up to that point* in the temporary store buffer. Now, if a mistake is made, clicking on the Undo button will recall the changes stored in the buffer (i.e. before the mistake occurred), allowing you to start again from there. The temporary store buffer is also updated automatically each time a scene is recorded with the settings for that scene.

Flashing a Scene

Holding the right mouse button down, with the pointer on the scene button, will instantly 'Flash' that scene, ignoring any fade times, etc, and letting go of the right mouse button will turn the flash off. This is very useful for quickly running through various non-sequential scenes, during programming, to check them.

Flashing and Releasing a Scene

Rather than dragging individual faders up, and then locking or releasing each of them one by one, so that beams etc. can be viewed when creating scenes for other functions, a quicker alternative is available. If temporary scenes are created and recorded, in which just the lamps are turned on, the scene can be 'flashed' by holding down the right mouse button with the pointer on the scene button; but in addition, if the left button is clicked prior to letting go of the right mouse button the faders are left at that scene's settings but put into *Released* mode. The pan and tilt settings can then be made and only those settings will be stored when the scene is recorded.

When recording multiple chase movement scenes etc. other quick and easy means of leaving dimmers turned on (without recording them) are to:

a) Record just the dimmers to a scene, set it to a ***Safe*** scene and run it.

b) Double-click whilst holding down the [Ctrl] key on the Dimmer fader(s) to lock it.

Numerous scenes can then be set up and recorded, but the Dimmer settings will not be stored in those scenes as they are in *Locked* mode and they will remain on until the safe scene is deliberately turned off or the fader is unlocked manually by double-clicking on it again whilst holding down [Ctrl].

Sliding a Scene Button

You can slide a scene button up like a fader, by holding down the [Ctrl] key when you drag it, to bring that scene on. Any up and down drag movements can be used to adjust the relative fader levels of all faders used in that scene - the percentage level (***00*** to ***FL***) being shown on the left of the Blackout window. Taking your finger off the mouse button then cancels the slide function, leaving the faders at their last dragged position.

Individual faders can also be adjusted independently by dragging them up or down. That scene can then be overwritten, or a new scene can be saved, using these new levels by clicking on the Rec button to activate it and then clicking on the desired scene button. In this way, numerous individual scenes can be run, adjusted and 'piled' together; the combined fader levels of all those scene settings can then be saved as a new scene.

Deleting a Scene

To delete a scene, click on the scene button and press [Delete]. You will be prompted to confirm or cancel. If the scene is used in any sequences you will be informed of this, and if you confirm the deletion it will be removed from all sequences that contain it.

Copying a Scene

To copy a scene, drag the scene button, or its label from the details display, onto the scene button that you wish to copy it to; dropping the scene elsewhere (e.g. back onto the same button or back into the display) will cancel the operation. If the scenes are on different pages then select two scene panels on the desk (one on the left and the other on the right) and copy from one to the other. If the scene button you are copying to already has a scene stored in it, then you will be prompted to confirm or cancel the overwrite.

Moving a Scene

To move a scene from one scene button to another, drag the scene button onto another empty scene button and hold down [Ctrl] before dropping it. If the original scene button is used in any sequences, those sequences will be updated with the new scene button number.

Scene Generator Function

Normally, when creating scenes you would select a fixture, or group of fixtures, highlight a function fader such as Gobo, Color etc. by clicking on it, hold down [Shift] to call up the Preset panel on the right, click on the desired preset and the function fader for that fixture, or for all the fixtures in that group, would then be set to that preset. You could then use the Rec button on the scene panel to record that setting to a scene button. You would then repeat this process for creating other scenes for all, or some, of the other available presets.

However, if there are a lot of presets available for each function on a fixture, or group of fixtures, the above could prove a laborious process, as there could potentially be very many scenes to record one by one! For this reason a 'scene generator' function has been included in ShowMagic that can automatically generate all the possible scenes for each function (using all the available presets for that function) for any fixture or selected group of the same fixtures. This eliminates the need for you to create each of these scenes manually.

Example:
Here's an example of how to use this function:

1) Using the demo desk, go to the patch screen and assign Martin MiniMac Profile (Mode 2) fixtures to fixture faders 13, 14, 15 and 16.

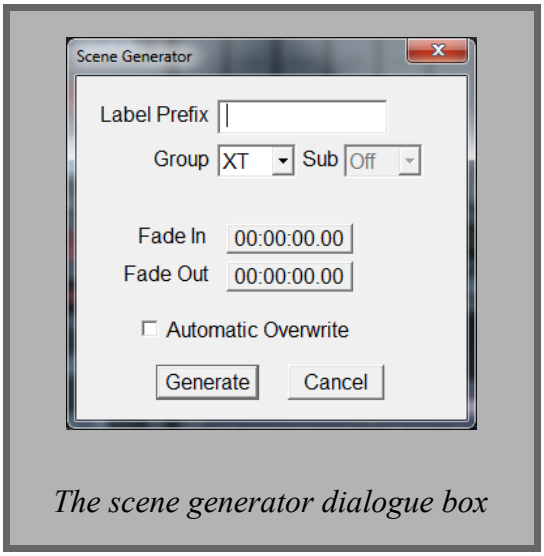
2) Go back to the main screen, click on the fixture panel tab on the left hand side of the desk, and click on the second page button to select fixture faders 13 to 24. You will now see the 4 MiniMac fixtures.

3) If you are grouping fixtures, the scene generator function will only work if the fixtures contained in that group are OF THE SAME TYPE. If you wish to generate preset scenes for a single fixture then don't use the group keys, simply highlight that single fixture.

4) For this example use the [F1] key to turn on group ***F1*** and the buttons below the MiniMac fixture faders will turn red to indicate that they are contained in that group, i.e. the ***F1*** group contains ALL 4 MiniMacs.

5) Click on any one of the MiniMac fixture faders (in the top section of the fixture panel) to highlight it, and then click on the color wheel function fader (in the bottom section of the fixture panel) to highlight that function.

6) On the right hand side of the desk select the scene panel and using the bank and page buttons select an empty page of scene buttons such the first page on bank *B,* i.e. scene buttons *B001* to *B024*.



The scene generator dialogue box

7) Hold down the [Shift] key and the presets for that function will be displayed on the right of the desk as normal. Right-click on the presets that you want auto-generated and their text will turn yellow to indicate that they have been selected for auto-generation. If you want to select them all then also hold down the [Ctrl] key and click on the last preset in the list. If white labels are present on the preset panel, then all of the presets from the last one clicked UP TO the label will be selected. Presets can of course be de-selected from the auto-scene-generator by right-clicking on them again to turn their text back to white.

8) Click on the Rec button on the scene panel and it will flash to indicate that it is in record mode, but this time hold down the *[Ctrl]* key whilst clicking on the first empty scene button (*B001*) and a Scene Generator dialogue box will appear. There are a number of items available on this dialogue box (described on the next page) but for now we will just use the Label Prefix box.

9) In the Label Prefix box type in *All MiniMacs* and click on the Generate button and you will see that ShowMagic automatically creates 31 scenes (*B001* to *B031*) on the scene panel for each available preset and also labels them with the prefix followed by the preset name. For instance, the first available color preset on the Preset panel is named White so scene button *B001* is labelled *All MiniMacs White,* the second preset name is Color 1 so scene button *B002* is labelled *All MiniMacs Color 1* and so on.

10) Next, press the [F2] key to select group ***F2*** on the fixture panel, then right-click on the buttons for fixture faders 13 then 15 to turn them red and include them in the group, i.e. this group now contains the 'Odd' fixtures.

11) Now, with either of the 'odd' fixture faders 13 or 15 highlighted, click on the Color function fader for that fixture to highlight it, select the third page of scenes in bank *B,* (scenes *B049* to *B072*), click on the Rec button on the scene panel, hold down the [Ctrl] key whilst clicking on scene button *B049* and the Scene Generator dialogue box will appear.

12) This time type *Odd MiniMacs* in the Label Prefix box and click on the Generate button. ShowMagic will then generate another 31 scenes on scene buttons B049 to B079 but these scenes will now contain color presets for the odd MiniMac fixtures - fixture faders 13 and 15 - the color functions for the MiniMacs on fixture faders 14 and 16 are not included in these scenes.

13) Follow steps 10 to 12 above, but use group ***F3*** to group the 'even' MiniMacs (fixture faders 14 and 16), and record the generated scenes starting on scene button *B097* onwards.

So, within literally seconds, we have recorded all the possible color scenes for the MiniMacs in three combinations - for all four fixtures, for odd fixtures and for even fixtures. You could have created groups for the outside fixtures - fixture faders 13 and 16, and another group for the inside fixtures - fixture faders 14 and 15. It all depends on the effect you are trying to achieve, but in any case the scene generator will generate all the scenes, for whatever groups you set up, in the same way. The choice of grouping, and combinations, is entirely up to you.

Other scene pages can be filled with scenes for the MiniMacs' Shutter / strobe, Gobo and Gobo Rotate functions using the same quick 'scene generator' function, so within minutes you can generate a veritable 'Palette' of scenes for all types of functions and fixture combinations from which your lighting chases and other sequences can then be easily created.

As scenes for Focus etc. are determined by the physical area and distances in which you are using the lighting fixtures, lots of presets for these functions haven't been provided in the ShowMagic fixture library as they aren't really of much use, so these scenes will need to be created one by one in the normal way. Don't forget to apply graphics to bank and page buttons (as described in "Applying Icons To Bank and Page Selector Buttons", p.43) as this is a useful way to easily identify and locate where the scenes for different fixtures and functions are stored.

Lee and Rosco Presets

because there are so many Lee / Rosco presets, they are spread across a number of pages that can be accessed using the numbered buttons on the bottom. Clicking on the middle Clr (clear) button will de-select (turned white) all presets previously selected (shown yellow) for the scene generator.

Scene Generator Options

A number of items are available on the Scene Generator dialogue box that can be used to determine how scenes are automatically generated:

Label Prefix - As just described, you can type in a prefix to the labels that will be applied to the set of scenes that are generated. The prefix is put at the start of the label and the name for each preset Color 1, Color 2 etc. (as shown on the preset panel) is added to the end of the label. In this way the sets of scenes can be easily identified later. Scene labels can of course be changed later in the usual way.

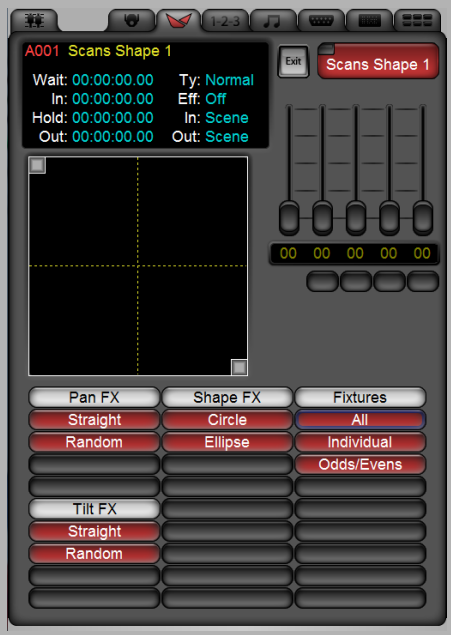
Group - As described earlier an exclusivity group setting for the scenes being generated can be selected here (and an optional sub-group letter if a main group letter from ***A*** to ***Z*** is selected), so that each scene is automatically set to that exclusivity group as it's default.

Fade In and Fade Out - A fade in and fade out time, in Minutes, Seconds and Frames, for the scenes being generated can be selected here.

Automatic Overwrite - If this item is ticked then the scene generator will automatically overwrite any existing scene buttons as it runs down the scene buttons filling them with the new preset scenes. If the item is un-ticked then you will be prompted to confirm each overwrite and if you click on the ***Cancel*** button at any time the scene generation operation will be aborted at that point.

FX Generator

Pan and tilt movements can be created by recording pan and tilt position scenes, dropping them into a lighting chase and then setting the speed and slope for that chase. This is ideal if you want the beams to go from one specific position, move to another specific position, and so on, perhaps to highlight particular points in a room. Shapes such as a circle or ellipse however are difficult to create using this method (you would need to record a lot of position scenes in order for the beam to trace an accurate circle) and there will be a lot of times when you may want to make a scanner, or group of scanners, move in a wave pattern or have their beams crossing over each other etc. This is where the FX Generator comes into play.



The FX generator panel

The FX generator is applied to a lighting scene event, and the pan & tilt positions for each fixture recorded in the scene act as the central reference point when a shape, e.g. a circle, is selected using the FX generator. If you had four scanners round a dance floor (one in each corner), positioned all their beams to the centre of the dance floor, recorded that as a scene and then applied a circle shape as the effect using the FX Generator, the four scanners would then all trace a circle in the centre of the dance floor when that FX scene was run.

Creating an FX scene

To create an FX scene, do the following:

1) Move the pan and tilt for each of the fixtures so that their beams are in the desired positions.

2) Record that setting to a scene button, and change its label via the Edit Scene dialogue box to something like *Scans Centred.* This can then be copied onto numerous empty scene buttons so that you can apply FX scenes to each of those new buttons without having to re-record the positions again each time.

3) Copy the *Scans Centred* scene button onto another empty scene button and change its label via the Edit Scene dialogue box to something like *Scans Shape 1*.

4) Click on the FX button and the normal scene panel will be replaced with an FX generator panel.

The FX generator panel consists of a details display (the items of which can be changed by clicking anywhere in the display to produce the Edit Scene dialogue box), an EXIT button (for exiting the FX generator and returning to the normal scene panel), a copy of the scene button, five faders (four of them having buttons below them), an FX window and some FX preset buttons.

FX Generator Details Display - settings on the left:

Wait

You can set a delay time here for the FX scene to wait (when it is run) before any functions stored in that scene (other than pan & tilt movements which occur straight away) are brought in using the In time.

In

If a fade In time is set then any function faders stored in the FX scene that are set to the Default In time (other than pan & tilt) will fade In over this time.

Hold

When the FX scene is turned off all the functions will pause at their current position for this period before fading out. If ***Flash*** has been selected on the standard scene panel for Eff: when no FX have been applied to this scene then the FX scene will run for the time set for Hold: and it will then automatically fade out using the Out time.

Out

When the FX scene is turned off all the function faders set to the Default Out time for that scene (other than pan and tilt) will fade out over this period.

The 'fade' in and out times for pan & tilt functions in an FX Scene are determined solely by the In: and Out: settings on the right hand side of the details display as described on the next page.

FX Generator Details Display - settings on the right:

Type

This can be set to ***Normal*** or ***Safe*** in the usual way on the standard scene panel - this cannot be changed on the FX generator panel.

Eff

When one or more Pan FX, Tilt FX or Shape FX presets are selected for a scene, as described below, FX Scn is displayed here to denote that the standard scene has been changed to an FX scene. If you wish to select ***Flash*** for an FX scene then the scene must be set to ***Flash*** on the standard scene panel whilst it is a standard scene - not an FX scene. If you wish to select ***Flash*** for an FX scene you must first turn off any Pan FX, Tilt FX or Shape FX presets (turn there buttons back to red by clicking on them) on the FX generator panel, click on the Exit button to exit the FX generator panel, change the Effect: to ***Flash*** using the Edit Scene dialogue box and then click on the FX button to select the FX generator again and re-select the Pan FX, Tilt FX or Shape FX presets required.

FX scenes set to flash will run for the Hold period and then stop automatically. If any FX preset buttons are highlighted the scene is automatically set to an FX scene and the Eff: setting on the FX generator panel (or the equivalent Effect: setting on the standard scene panel) cannot be changed.

In

This can be set to ***Scene*** or ***Spd*** (short for FX Speed). If set to ***Scene*** then the pan and tilt functions (and any other functions that are set to use the Default In time) in that FX scene will fade in using the time set in the In: option on the left of the details display. If set to ***Spd*** then the pan and tilt functions in that FX scene will fade in using the value set for the pan FX speed in BPM (see 'FX Speed' below).

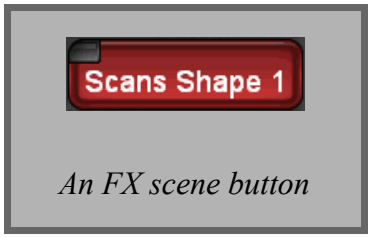
Out

This can be set, as above, to select how the pan & tilt functions (and any other functions that are set to use the Default In time) in that FX scene fades out. If set to ***Scene*** then those functions will fade out using the time set in the Out: option on the left of the details display. If set to ***Spd*** then those functions will fade out using the value set for the FX speed in BPM - see below.

The Pan FX Presets

You can select either ***Straight*** or ***Random*** for the Pan FX. If you click on either preset button (to highlight it in blue) you will notice that the graphic for the scene button changes slightly.

This denotes that an effect has been applied to that scene, turning it into an FX scene.



An FX scene button

Straight

If selected the first three faders on the FX generator panel will change:

This first fader is used to set an FX *Delay* Offset (default = ***00***).

This second fader is used to select a Pan FX *Speed* in BPM (default = ***60***).

This third fader is used to select a Pan FX *Slope* setting (default = ***00***).

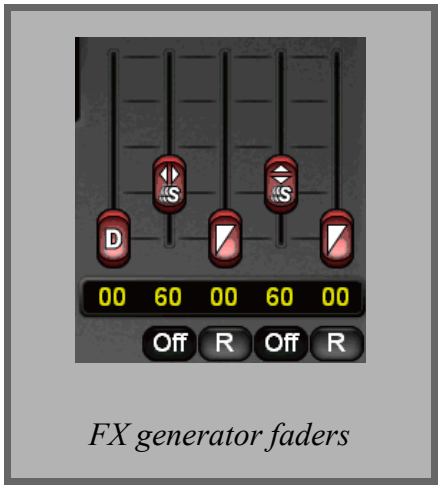
If you double-click on the scene button as normal to run the scene, the tilt faders for all of the fixtures recorded in the original scene will move to the reference positions set in that scene and remain there. Because you have selected ***Straight*** for the Pan FX faders, the fixtures will jerk between the extreme left and right positions at 60 BPM. If you adjust the third, Pan FX Slope fader to 50% then the fixtures will pan between the positions over half (30 BPM) of the period set by the Pan FX Speed setting (60 BPM), wait for half the period, and then pan back the opposite way over half the period, and so on continuously in a similar way to scenes in a lighting chase. The Pan FX Speed can of course be changed by sliding the Pan FX Speed fader up / down to increase / decrease the speed respectively.

Random

If this preset is selected then the three faders appear, as above, but instead of panning between the extreme left and right positions, ShowMagic will randomly pick (continuously) pan positions within the range limiter box for the fixtures to pan between.

The Tilt FX Presets

As with the Pan FX presets you can also select either ***Straight*** or ***Random*** for the Tilt FX. When either of these is selected the fourth and fifth faders on the FX generator panel change to Tilt FX Speed and Tilt FX Slope faders.



FX generator faders

Now when you run that FX scene, rather than staying at the tilt positions recorded in the original scene, the Tilt FX will be applied to the fixtures' tilt fader using the Tilt FX Speed and Tilt FX Slope settings as selected.

The Pan FX and Tilt FX presets can be used independently or together. Combining them, and varying their speed and slope settings, can produce an almost unlimited number of waveforms and other shapes.

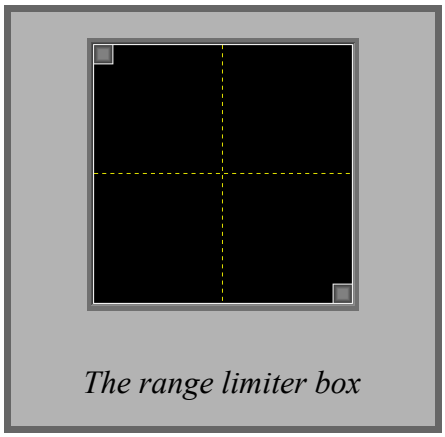
Example:

Select ***Straight*** for both Pan FX and Tilt FX presets, and use the values shown in the table below to create some example waveforms:

	Pan Speed	Pan Slope	Tilt Speed	Tilt Slope
6-Peak Horizontal Sine Wave	*5*	*FL*	*60*	*FL*
3-Peak Horizontal Sine Wave	*10*	*FL*	*60*	*FL*
6-Peak Vertical Sine Wave	*60*	*FL*	*5*	*FL*
3-Peak Peak Vertical Sine Wave	*60*	*FL*	*10*	*FL*
6-Peak Horizontal Triangular Wave	*5*	*FL*	*60*	*90*
3-Peak Horizontal Triangular Wave	*10*	*FL*	*60*	*90*
6-Peak Vertical Triangular Wave	*60*	*90*	*5*	*FL*
3-Peak Vertical Triangular Wave	*60*	*90*	*10*	*FL*
6-Peak Horizontal Square Wave	*5*	*FL*	*60*	*0*
3-Peak Horizontal Square Wave	*10*	*FL*	*60*	*0*
6-Peak Vertical Square Wave	*60*	*0*	*5*	*FL*
3-Peak Vertical Square Wave	*60*	*0*	*10*	*FL*

As you can see from the above examples, it is the relationship between the Pan and the Tilt Speed settings that determine the vertical / horizontal *direction* and *frequency* of the waveform, and the Slope settings determine the *shape* of the waveform.

The FX Window and Range Limiter Box



The range limiter box

The FX window consists of a black background with intersecting horizontal and vertical yellow dotted lines.

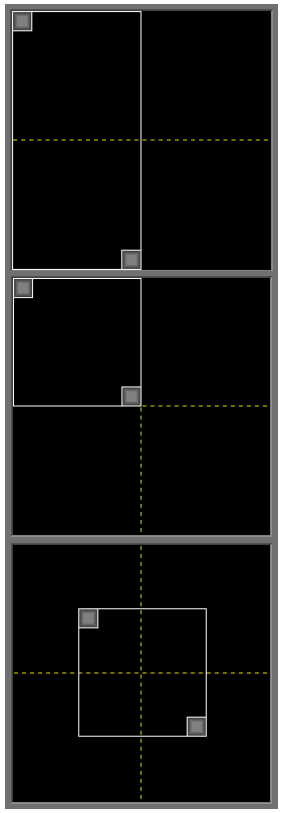
The vertical dotted line represents the DMX value range for tilt channels with the very top of the line representing ***000*** and the very bottom representing ***255***.

The horizontal dotted line represents the DMX value range for pan channels with the extreme left of the line representing ***000*** and the extreme right representing ***255***.

Contained inside this window is a white square outline with two 'handles' shown as grey squares in the top left and bottom right - this is the pan and tilt 'Range Limiter' box.

The two handles attached to the Range Limiter box are used to set the minimum and maximum pan and tilt range limits for the FX scene with the box acting as a graphic indicator of these range limits. When an FX preset is first selected the top handle defaults to the extreme top left of the window (minimum pan = ***000***, minimum tilt = ***000***) and the bottom handle defaults to the extreme bottom right of the window (maximum pan = ***255***, maximum tilt = ***255***). If you select ***Straight*** presets for both Pan FX and Tilt FX and run the FX scene, as before, all the pan and tilt channels used in the scene will scan between DMX values of ***000*** and ***255***.

Setting the Range Limits



With the FX scene still running, drag the bottom handle half way across to the left, so that the right hand side of the box lines up with the vertical dotted line.

You will notice that the pan channels for all the fixtures stored in that FX scene will now only scan between the values of ***000*** and ***127*** - you have limited the pan channels to the half of their range. The vertical edges of the box represent the pan limits.

Similarly, if you now drag the bottom handle up, so that the bottom of the box lines up with the horizontal dotted line.

You will notice that the tilt channels will only scan between the values of ***000*** and ***127*** - you have now also limited the tilt channels to half of their range. The horizontal edges of the box represent the tilt limits.

Moving the Range Limits

As well as being able to set range *limits* using the Range Limiter box, you can also set the range *position* using the top handle. Here's an example: This time using the RIGHT mouse button, drag the top handle down and to the right to move the Range Limiter box into the centre of the FX window.

You will notice that the pan and the tilt channels now scan between the values of ***064*** and ***191*** - the channels are still scanning over half their range (as indicated by the size of the box, but they are now doing so in the centre of their range.

The range limits and positions given in the above examples were used to illustrate simply how the Range Limiter box works - any range limits and positions of your choice can of course be used. Here's a practical example of using the Range Limiter with a simple FX scene. Let's say you have four scanners, in a row, at the back of a stage. You want the scanners to trace a sine wave pattern to and fro, in unison, across the stage, but you don't want the beams to leave the stage area and blind the audience:

1) Group the four scanners using a group button (***F1*** to ***F8***).

2) Move the pan and the tilt function faders for any one of the scanners in the group*.

3) Record a scene and then un-group the fixtures.

4) Highlight that scene button and click on the FX button to call up the FX generator panel.

5) Select the Pan FX ***Straight*** and Tilt FX ***Straight*** presets.

6) Set the Pan FX Speed fader to ***20***, the Pan FX Slope fader to ***FL***, the Tilt FX Speed fader to ***60*** and the Tilt FX Slope fader to ***FL*** - these settings will trace 3 sine waves to and fro across the stage when run.

7) Run the FX scene, and whilst it is running you can drag the handles on the Range Limiter box in the FX window to set a range and position that will keep the scanners' beams confined to the stage area.

* If you use Pan FX *and* Tilt FX presets, the initial stored 'reference' values of the pan and the tilt faders become irrelevant - but you must still record a value for pan and tilt channels in order to include those fixtures in the FX scene. It is only when you are using a Shape FX preset, such as a circle that requires a central reference point to draw the shape around, or if you are going to use just one or the other of the Pan FX or Tilt FX (and not both) that any stored pan and tilt reference values are actually utilised.

The Fixture Presets

The last column on the bottom of the FX generator panel contains the Fixtures presets. So far we have applied Pan FX and Tilt FX presets to the fixtures contained in the scene, but when we have run the FX scene all the fixtures in the FX scene have traced the same shape in unison. Let's assume that six scanners on fixture faders 1 to 6 are contained in the scene - the Fixtures presets can select the following options:

All
This preset is the default and it makes all the fixtures in the FX scene do exactly the same shape at the same speed and in the same direction. This is what we have been using so far.

Individual
If this preset is selected then each fixture will trace the same pattern as the rest, and at the same speed etc., but some are picked at random to trace the pattern in the *opposite* direction. This can be used to produce random, criss-crossing effects etc.

Odds / Evens
If this preset is selected then each fixture will trace the same pattern as the rest, and at the same speed etc., but the odd fixtures in the scene (1**,** 3 and 5) will trace the pattern in one direction and the even fixtures (2**,** 4 and 6) will trace the pattern in the opposite direction. This can be used to produce symmetrical criss-crossing effects.

Using Odds / Evens to Create a Marching effect
Lets assume that we are using the six scanners as above. We can use the Fixture presets along with the Tilt FX preset to create a 'march' effect, where the odd fixtures move up as the even fixtures move down, in the following way:

1) Group the six fixtures.

2) Move their pan & tilt function faders to 50% and record that as a scene.

3) Click on the FX button to call up the FX generator panel.

4) Select the Tilt FX ***Straight*** preset, the Fixture ***Odds/Evens*** preset and slide the Tilt FX Slope fader to ***FL***.

5) Double-click on the scene button to run it.

You will see that the pan channels will move to the position stored in the scene (50%) and stay there. This is because no Shape FX (pan AND tilt) or Pan FX preset has been applied to the scene that would affect those channels, so ShowMagic simply uses the stored pan position instead. The odd fixtures will move up as the even fixtures move down, at the speed set by the Tilt FX Speed fader, to produce the marching effect.

If you now click on the Pan FX ***Straight*** preset to select it, set its Speed fader to ***10*** and its Slope fader to ***FL***, then stop the FX scene and re-run it, you will see the scanners march as before but the odd and even fixtures will now also criss-cross each other slowly.

If you now wish to limit the range of this effect then use the Range Limiter box in the FX window, as described in "The FX Window and Range Limiter Box", p.67 to select how low and high the scans march, and how widely they cross.

The Delay Offset Fader

The first fader on the FX generator panel can be used to set an offset delay to the fixtures in an FX scene. In all the effects we have used up until now, the fixtures have all started to trace their shape at the same time, but we can use this fader to select a delay so that each fixture can be made to 'lag' behind the previous one to create 'Mexican-wave' type effects.

The value of the Delay Offset fader is a percentage of the Pan FX Speed fader times 2 i.e. if the Pan FX Speed is set to ***30*** BPM (i.e. 2 seconds) and the Delay Offset fader is set to ***50*** then the Offset Delay time will also be 2 seconds. Slide the Offset Delay fader up to ***FL*** and the delay will become 4 seconds.

Triggering Pan FX and Tilt FX using Sound-To-Light

The buttons below the Pan FX and Tilt FX Speed faders can be used to select one of the sound-to-light frequency meters on the master panel to trigger the FX. Right-clicking on the button selects ***PK***, ***LF***, ***LM***, ***HM*** or ***HF*** respectively. Left-clicking goes back through the options i.e. ***HF***, ***HM***, ***LM***, ***LF***, ***PK*** or ***Off***.

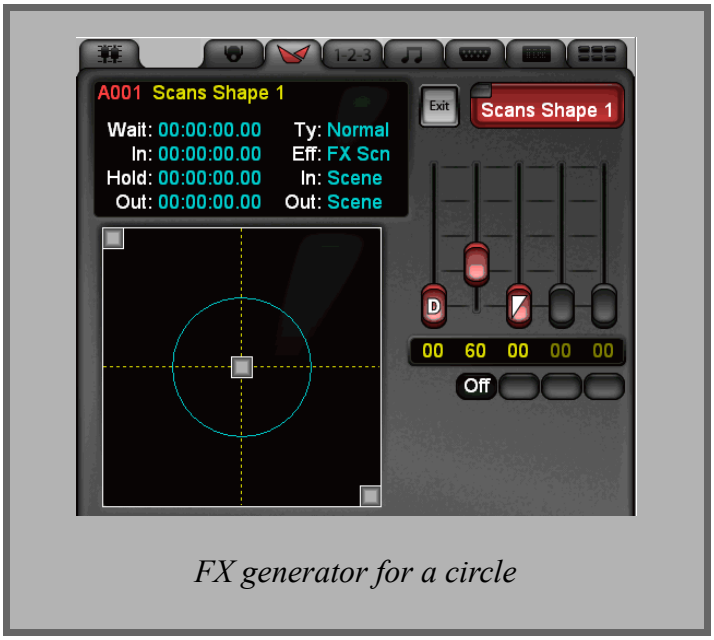
When the appropriate meter is triggered, the pan or tilt moves, at the speed selected with its Speed fader, then it stops until it is triggered again. Setting different frequency meters for the Pan FX and Tilt FX, or setting one of them to sound-to-light and the other to a normal speed setting, can produce interesting pan and tilt FX that follow the music.

The Random Slope Buttons

If you click on the buttons labelled R below the Pan FX and Tilt FX Slope faders it activates them (turns them blue). When activated ShowMagic will then randomly pick whether to use the selected slope setting or jump to the opposite FX position each time round. This can be very effective, especially when used in conjunction with the sound-to-light options above - producing even more varied patterns that follow the music - sometimes moving smoothly, sometimes snapping.

The Shape FX Presets

Combining the Pan FX and Tilt FX presets can produce many waveform type shapes, but in order to create geometric shapes such as circles and ellipses the pan and tilt values must be calculated and applied mathematically to achieve the desired shape. The Shape FX presets are provided for this purpose.



FX generator for a circle

The two most useful geometric shapes have been provided - ***Circle*** and ***Ellipse***.

The Pan FX and / or Tilt FX presets can be used in conjunction with the Shape FX presets, as described later. For now, de-select any Pan FX and Tilt FX presets that may be highlighted. Select the Shape FX ***Circle*** preset - the faders and FX Window on the FX generator panel will change.

The first fader remains the Offset Delay fader, the second fader changes to a Shape FX Speed fader with a sound-to-light selector button below it, and the third fader becomes the Shape FX Slope fader.

The selected shape is also now shown in FX Window and the centre handle is used to change the size of the circle. Dragging the centre handle to the right of centre increases the size, dragging to the left of centre decreases the size. When a Shape FX preset is first selected its default size is 50%. Therefore, when the FX scene is run the pan and tilt function faders will move in the range of +25% and -25% of the original pan & tilt positions stored in that scene i.e. if both the pan and tilt fader values were stored in the scene as ***127***, then the faders will move between the DMX values of ***064*** and ***191*** when tracing the shape.

Please Note:

If the Shape FX ***Ellipse*** preset had been selected then dragging the centre handle to the right increases the width of the ellipse, dragging to the left decreases the width, dragging down from the centre increases the height and dragging up from centre decreases the height.

The Shape FX Speed fader is used to select how fast the fixtures in the FX scene trace the shape. If set to ***60*** (BPM) the fixtures will trace 60 circles per minute, i.e. one per second.

If The Shape FX Slope fader is set to ***FL*** then the circles will be traced continuously. If set to ***50*** (%) then the shape will be traced over half the speed setting, the fixtures will then remain static for half a speed setting and so on.

Triggering a Shape FX using Sound-To-Light

If the button below the Shape FX Speed fader is set to ***PK***, ***LF***, ***LM***, ***HM*** or ***HF*** respectively the shape will be traced (at the speed set with the fader) whenever that sound-to-light channel is triggered, then it will remain static until triggered again, and so on.

Using the Fixtures Presets with Shape FX Presets

The Fixtures presets - ***All***, ***Individual*** and ***Odds/Evens*** work in a similar way with shapes as they do with Pan FX and Tilt FX patterns, but it is the shape that will be traced in opposite directions. e.g. If Shape FX ***Circle*** is chosen, ***All*** will trace the circles on all the fixtures in the FX scene in a clockwise direction, ***Individual*** will randomly pick the direction for each fixture's circle and ***Odds/Evens*** will trace the odd fixtures' circles clockwise and the evens' circles anti-clockwise.

'Clipping' Shape FX using the Range Limiter Box

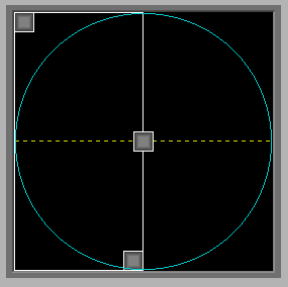
The Range Limiter box can be used to clip a preset shape to create other varied shapes such as a semi-circle, quarter-circle, square, rectangle etc. As we have seen, the range limiter box sets the limits as to how far the pan and tilt channels can scan and if we apply this with a shape the FX Generator attempts to trace the whole shape but if a channel reaches the range limit it will not pass that limit and remains in that position until it is told to move to another position which is in the range.

Here are a few examples:

Example 1: Creating a Semi-Circle

1) Select only the Shape FX ***Circle*** preset and drag the centre handle down and to the right to make the circle full-size. The limiter box can be used to crop shapes of any size, but use a full-size circle to best illustrate the effect.

2) Drag the bottom handle halfway to the left so that the right edge of the limiter box lines up roughly with the dotted vertical (tilt) line.



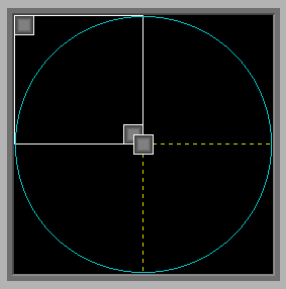
The range limiter box for a semi-circle

Now when you run that FX scene the fixtures will try to trace a circle but will be restricted to the right edge of the limiter box, and so will trace a semi-circle instead.

Example 2: Creating a Quarter-Circle

Drag the bottom handle halfway up so that the bottom edge of the limiter box now also lines up with the dotted horizontal (pan) line.

When you run that FX scene the fixtures will try to trace the circle but will be restricted to the right and bottom edges of the limiter box, and so will trace the shape of a quarter circle instead.

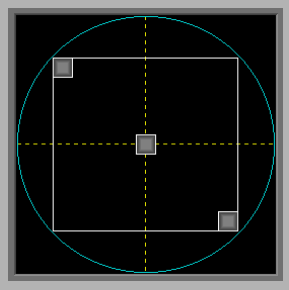


The range limiter box for a quarter-circle

Example 3: Creating a Square

Use the circle as above, but drag the top and bottom handles so that the edges of the limiter box fall inside the circle .

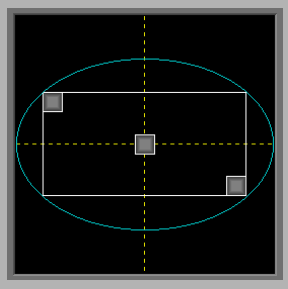
When you run that FX scene the fixtures will try to trace the circle but will be restricted to all four edges of the limiter box, and so will trace the shape of a square instead.



The range limiter box for a square

Example 4: Creating an Oblong

This time select the Shape FX ***Ellipse*** preset, and drag the top and bottom handles so that the edges of the limiter box fall inside the ellipse.



The range limiter box for an oblong

When you run that FX scene the fixtures will try to trace the ellipse but will be restricted to all four edges of the limiter box, and so will trace the shape of an oblong instead.

We have used the range limiter with Shape FX to modify the preset shapes, but you can use the range limiter in a different way to achieve even more effects. With Shape FX presets the shape is normally centred on the 'reference' pan & tilt positions recorded in the original scene. This can be useful if you wish to 'fix' shapes to specific areas - such as spots on a dance floor - with one fixture covering one area around its 'fixed' central point, and another fixture covering another area etc.

However, you can use the Pan FX and Tilt FX presets in conjunction with Shape FX presets to *move* the shapes around a specific area instead. The range limiter box defines the area that the shapes will move around in, and the rate of movement of the shape is defined by the Pan FX and Tilt FX Speed fader settings.

Here's an example:

1) Select the Shape FX ***Circle*** preset and drag the centre handle to make the circle quarter-size.

2) Select the Pan FX ***Straight*** and Tilt FX ***Straight*** presets. A Pan FX Speed fader and Tilt FX Speed fader will then be accessible. These are used to set how fast the shape will move around the area defined by the Range Limiter box. These speeds are relative to the Shape FX Speed. Slide both of these to ***FL*** to set the fastest speed.

3) Run the FX scene and you will see the fixtures moving around the range limit as they trace the circles.

4) Select Tilt FX ***Random*** and you will see the shapes moving between randomly picked tilt positions but sweeping to and fro on the pan.

5) Select Pan FX ***Random*** and the shapes will move between randomly picked pan and tilt positions.

Now that you have learned the principles of the FX generator, experimentation should provide you with plenty of effects and enable you to find the effect you require. To leave the FX generator panel and return to the normal scene panel, simply click on the EXIT button.

Changing the Reference Positions in Existing FX Scenes

If you have created a number of FX scenes that used a particular reference position (such as the centre of a dance floor in the earlier example), and you later wanted to change that reference position for whatever reason (maybe you have had to move the scanners on the rig) then you can change the position quite easily without having to create all the FX scenes again from scratch.

Do the following:

1) Use the scanners' pan and tilt faders to re-position them on the new reference position.

2) Record that position onto a new scene button, label it as e.g. *Reference*, then run that scene button.

   We are now going to store the new reference positions for the scanners (as *Cued* by the running *Reference* scene) in each of the FX scenes, so set the scene panel's clear button to Clr N (by right-clicking on it) so that when we are re-recording the FX scenes the faders are not cleared down and the *Reference* scene is still left running.

3) Set the scene panel's record button to Rec M recording mode using right-clicks.

4) With the Reference scene running, click on the Rec M button to set it recording and then click on the FX scene that you want to store the new reference positions in.

5) Repeat step 5 above for each FX scene that you want to re-record.

6) Turn off the *Reference* scene and set the clear button back to Clr Y (if required).

Please Note:
Make sure that no FX scenes are running when you are re-recording them - otherwise the current pan and tilt fader positions (as being *Moved* by the running FX scene) will be recorded to that FX scene rather than the static positions stored in the *Reference* scene.

ColorScene

The ColorScene feature has been included in ShowMagic to simplify the programming of color patterns using LED lighting fixtures and single channel 'Fixed Color' fixtures such as par cans with color gels. Some manufacturers produce moving head and floodlight fixtures that use LEDs instead

of normal lamps - these can be treated, and programmed, in the same way as other moving heads etc. that use RGB or CMY (color mixing) channels. The majority of LED fixtures however, tend to be programmed and used in a dramatically different way to other DMX lighting fixtures - they are used to produce 'moving' colored lighting effects, without any 'physical' movement of the fixtures.

Typical applications would be:

- Strips of LEDs to light the length of the underside of a bar or to highlight cornices, ceilings etc.

- LED panels used for illuminating dancefloors etc.

ColorScene provides a means of 'soft patching' ShowMagic fixture faders (containing LED fixtures or colored par cans) onto a graphically visible grid which enables very quick and easy programming of any desired effects in a uniquely simple way.

A ColorScene lighting scene is more like an FX Scene than a normal ShowMagic lighting scene i.e. rather than it being a 'static' lighting state, the scene itself changes to produce dynamic lighting effects without the need to drop numerous static scenes into chases or other sequences to produce those effects.

LED fixtures are assigned to ShowMagic fixture faders, and their DMX addresses patched, on the patch screen in the normal way (See Appendix B at the end of this manual for more information on patching LED fixtures). Once they are patched, the LED fixtures can be 'laid out' on a grid to simulate their physical arrangement so that when effects are applied to them, the effects produced can also be simulated on-screen.

Please Note:
Throughout this section the term 'RGB fixtures' refers to any fixtures with RGB or CMY color mixing functions. 'Generic fixtures' refers to any fixtures that have a physically fixed color e.g. par cans or spots with colored gels etc.

Creating a ColorScene Lighting Scene

Let's assume we are using 9 ChromaPanels in a 3x3 matrix arrangement thus:

01	02	03
04	05	06
07	08	09

Throughout this section we will use the term *matrix* to denote the physical grouping or layout of LED fixtures, and the term *grid* to mean the on-screen grid.

Let us further assume that the ChromaZone controller is set to 36-channel mode and its start address is 001. Panel 01 above is assigned to fader 001 - *ChromaPanel* - and addressed to DMX channels 001 to 003, Panel 02 above is assigned to fader 002 and addressed to DMX channels 004 to 006 and so on.

The ColorScene panel

1) Select the fixture panel on the left of the screen (this should remain on the left-hand side when you are using ColorScene) and click on the first page selector button at the top labelled 1 to select fixtures 1 to 12.

2) Select the scene panel on the right, highlight an empty scene button, e.g. *Scene A001*, and then click on the button labelled CScn - a ColorScene panel will then replace the normal scene panel.

The panel consists of:

a) The usual details display at the top left.

b) An Exit button for exiting the ColorScene panel and returning to the normal scene panel.

c) A copy of the scene button initially shown grey (empty).

d) A Speed fader (that uses BPM in the same way as lighting chases) with a sound-to-light frequency selector button below it. Left & right clicking on this button selects the frequency range that will trigger each Colorscene frame (***LF***, ***LM***, ***HM*** or ***HF***), or if ***Off*** is selected on the button then the speed set by the speed fader is used. The combination of the speed & slope settings determines how quickly the ColorScene frames crossfade, and can be re-triggered, when set to trigger by sound-to-light.

e) A Slope fader with a randomise selector button below it - right clicking on this button turns the randomiser on (shown blue) or off (shown grey). The randomiser will randomly pick (for each frame) whether the slope setting is used or no slope is used for that frame.

f) A fixture display (initially empty) that shows the fixture assigned to the currently highlighted cell in the grid, and X and Y grid size selectors.

g) The ColorScene grid initially showing 3 cells across by 3 cells down.

h) A button marked Live. If you want ColorScene to output dmx to the fixtures patched on the grid 'live' as you are programming, rather than just outputting DMX to those fixtures when the ColorScene scene is run, then double-clicking on this button will turn it red and enable the live dmx output. Double-clicking again on the button turns it off.

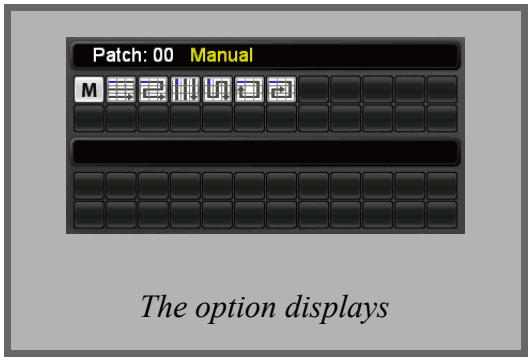
i) A copy of the scene panel's Clear button.

j) Four buttons labelled Patch, Chase, Color & Run for selecting the 4 different modes.

k) Two options displays - with selection areas below them.

l) These upper and lower options displays and selection areas change depending on what programming mode you are in.

m) A duration window that displays the time duration of a ColorScene event when a ColorScene chase is selected to repeat a number of times, or a series of chases are run in succession for that ColorScene event.



The option displays

n) Scroll buttons to the right side of the bottom selection area.

ColorScene Patch Mode

This is the first, default, mode that you use in ColorScene. Before you can apply any ColorScene effects to a group of LEDs (or other colored fixtures) you first need to 'soft-patch' those fixtures onto the grid - you will notice that at this point the Chase, Color and Run mode selector buttons are not selectable (greyed out).

If we were using 16 ChromaPanels situated in a 4 x 4 grid we would need to make the ColorScene grid 4 x 4 to accommodate this. You could do so by simply right-clicking on the yellow ***X03*** value to increment it to ***X04*** and do likewise for the Y digits. The grid would then change to 4 x 4. For this exercise, however, we will stick with the default 3 x 3 grid. The next step is to soft-patch the fixtures onto the grid and this can be done in one of a few ways:

Manual

1) Click on the first icon in the top selection area - - the default, highlighted option. This selects manual soft patching and Patch: 00 Manual is then shown in the display.

2) Click on fader 001 (the first ChromaPanel) on the fixture panel to highlight it, then double-click on the first (top left) cell in the grid - the fixture number and name of the fixture assigned to that cell will then appear in the display above the grid i.e. 001 ChromaPanel.

3) The next fixture number is automatically incremented and highlighted ready for patching to the next cell.If you don't want to patch this fixture to the next cell then highlight the fixture number that you do want.

4) Double-click on the next cell to patch it, and so on until all cells are patched with the desired fixtures.

This manual system of soft-patching is very useful if the fixture faders are not in an order that actually corresponds with the physical layout of the fixtures. It is also a means by which you can have, say, 4 detached 3 by 3 matrices of LED fixtures (36 LED fixtures) and soft-patch them all onto the one ColorScene grid - any effects patterns (Chases) can then be applied across those separate matrices to achieve a unified effect across different areas of a venue.

Soft-patch Presets

Because we have assigned the ChromaPanels to the fixture faders in a linear manner on the patch screen, and patched their DMX addresses accordingly, we can make use of one of the preset soft-patching options that are available, namely the second icon option below the upper options display that is a soft-patch from left to right, top to bottom shown as Grid: LR,LR when the icon is selected.

To use this preset soft-patch, simply highlight fixture 001 on the fixture panel, select this icon, and then double-click anywhere in the active grid - all 9 cells in the active block will then be soft-patched according to that soft-patch preset.

The soft-patch preset icons denote the order of patching using an arrowed line, with the blue part of the line showing the first fixture. Presets 2 to 5 have been provided for the most common patching orders used. If the fixtures you are using are not physically ordered in any of these consecutive patterns then the first icon - the default, manual system of soft-patching - can be used.

The sixth preset icon - - can be used if you have fixtures arranged in a loop.

For instance let us assume you have 12 ChromaPanels arranged around the edge of a dance floor thus:

01	02	03	04
12			05
11			06
10	09	08	07

By setting the active grid size to ***X04 Y04***, selecting fixture 001, clicking on the sixth soft-patch preset icon and then double-clicking on the first, top left cell in the active block in the grid, twelve ChromaPanels (fixtures 001 to 012) will then be patched consecutively to the cells as shown above.

Soft-Patching Dimmer Functions

If you are using fixtures that possess a dimmer function as well as RGB or CMY functions you can also set dimmer levels in each frame of a ColorScene chase - more on this later.

For now we will use a 3 x 3 grid, patched left to right, left to right etc. so use the 2nd soft-patch preset - - as described above.

Now the fixtures have been soft-patched onto the grid we can start using the Chase & Color programming modes - you will notice that Chase & Color buttons have now been enabled to indicate this and an RGB icon has been applied to the left of the scene button to indicate that this is now a ColorScene scene. You will also notice that the speed & slope faders have also been enabled. The next step is to select the type of chase we want to apply to this ColorScene.

Click on the Chase button to select Chase mode and the upper options display will change to show the Chase details with a range of chase options displayed in the selector area below it.

Chase Mode

ColorScene currently includes one type of chase effect - ***Frame***.

Using ***Frame***, a chase can be defined frame-by-frame within a single scene event. This makes it very flexible because any type of effects can be created in this way. The ***Frame*** chase provides a much quicker means of creating LED effects compared to creating multiple scenes using the fixture faders, and then dropping these scenes into a chase sequence. In addition, you can also view on the grid the effects created and edit them graphically.

Frame

With ***Frame*** a dynamic ColorScene effect can be created frame-by-frame in a similar way to how cartoon animations are created. These frames can then be run at whatever speed (and using whatever slope) you have selected to produce the desired dynamic effect.

Once you have selected the type of Chase effect you require (***Frame***), the next step is to select the colors we want to use for that ColorScene and to do this you select Color mode by clicking on the Color mode selector button.

Color Mode

A ColorScene lighting scene is based around a color palette and each ColorScene can possess its own palette of 24 colors. The first two colors are fixed as black and white, and the next 6 colors default to red, green, blue, cyan, magenta and yellow. To create a different palette, highlight any color box from the third box onwards by clicking on it and then you can choose your colors using one of the following options.

a) Selecting Lee / Rosco gel colors using the Presets panel - If you wish to use a range of colors available on the presets panel then simply click on any one of the RGB function faders on the fixture panel, hold down the [Shift] key to call up the Presets panel, and then click on each preset that you want in order. Those colors will then be selected and set on the color palette in that order. If you want to add another color to the palette at any time, or change one of the existing colors, simply click on the color box, click on any one of the RGB function faders on the fixture panel, hold down the [Shift] key to call up the Presets panel, and then click on the preset color that you want for that color box.

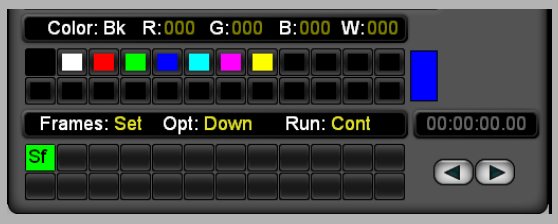
b) Creating colors using the RGB function faders on the fixture panel - If you wish to use the RGB function faders on the fixture panel to select a color and then store it in the palette, simply adjust those faders to obtain the color you want and then hold down [Ctrl] and double-click on the appropriate color palette box to store that color in that box. Do likewise for the other color boxes. Conversely, if you want to set the RGB function faders to the values stored in a color box, simply hold down [Ctrl] and double-right click on that color box. You can then adjust it and then store that new color in the palette by clicking on the next empty pallet box.

You can also store a ‘background’ color so that when you are coloring cells a left-click will paint that cell with the currently selected palette color, and a right-click will paint that cell with the background color. To select the background color (default = black), simply right-click on a color in the palette. The large box on the right of the palette will then show the background color.

Time-saving tip:

If you are intending to create a number of ColorScene scenes that all use the same grid layout and colors, then you should, at this stage, exit the ColorScene panel by clicking on the Exit button and drag and drop that ColorScene scene onto the required number of empty scene buttons. Those ColorScene scenes will then have the grid and colors already set up, ready for you to select whatever frames, speeds etc. you want to apply to them later.

Highlight the original ColorScene button - *Scene A001* - and click on the CScn button to select the ColorScene panel for that scene, and let us assume that the colors you have selected for this ColorScene are the first two fixed colors; Black and White followed; by Red, Green, Blue, Cyan, Magenta and Yellow. The upper options display shows the currently selected color box along with the red, green, blue and white values for that color.



Color and frame options

Having selected ***Frame*** as the chase type, the lower options display shows the following:

Frames:

This shows the number of frames in that chase when you create them (initially shows Set).

Opt:

This shows the currently selected direction for that chase; ***Down***, ***Up***, ***Bounce*** or ***Random***. These work in a similar way to the ***Chase*** sequence options, e.g. if ***Down*** is selected and the ColorScene chase contains 3 frames, then the frames will be run in the order: 1, 2, 3, 1, 2, 3 etc. when that ColorScene chase is run.

Run:

This option can be set to ***Cont*** (continuous) or any value between ***01*** and ***99***. If ***Cont*** is selected then the ColorScene will run continuously until it is stopped. If a value is selected then the ColorScene chase will repeat that number of times and then stop automatically. The time display to the right of Run: will also show the duration of that chase, calculated automatically from the speed of the chase and the number of repetitions and if you also click on the ***Hold*** option to highlight it in bright yellow then the chase will run the specified number of times and then hold on the last frame until the ColorScene is stopped.

The Set Frame

The first frame in a Frame chase is always a *Set* frame labelled as Sf in the frame display. Because you can use ColorScene to create 'dimmer' chases for fixed-color single channel generic fixtures, e.g. par cans with different colored gels, the set frame is provided as a means of assigning fixed colors to cells on the grid so that when you run a dimming chase on the grid you can see the effect of those colors dimming.

By selecting the Sf frame, a color in the palette can be applied to the cells containing single channel fixtures (see "Notes on Mixing Generic and RGB / CMY Fixtures on the Same Grid", p.89 for more detailed instructions).

Creating Frames

To create the first frame in a ***Frame*** chase simply double-click on ***Set*** to the right of Frames:. The options will then be selectable (shown in bright blue), the number of frames will be displayed as ***01*** and the 2nd box in the lower selection area will change to show 01. This box now contains the first frame. You will also notice that the active cells in the grid have been colored black - the default color, i.e. they are 'empty'.

You can now color the active grid cells by first clicking on the desired color in the color palette to select it, and then doing any of the following:

a) Left-click on any cell to change it to the selected palette color, or right-click to change it to the selected background color.

b) Drag the mouse pointer over the cells to 'draw' the palette color into those cells.

c) Hold down [Ctrl] and double-left-click on a cell of a particular color to change all cells of that color to the selected palette color.

d) Hold down [Ctrl] and double-right-click on a cell of a particular color to change all cells of that color to the selected background color.

To create subsequent frames you can do one of the following:

a) Double-click to the right of Frames: to add a blank frame to the next empty frame box.

b) Drag an existing frame onto an empty frame box to copy that frame.

c) Double-click on an existing frame to copy that frame into the next empty frame box.

To delete a frame simply click on the frame box to highlight it, press [Delete] and then confirm.

If you have created any frames then delete them now and we will create a new ColorScene frame 'chase' from scratch.

Using the 9 ChromaPanels in a 3 x 3 grid, let us create a simple ColorScene chase for *Scene A001* that changes the panels from red to green to blue:

1) Double-click to the right of Frames: to add the first blank frame.

2) Click on the red color (Color: 01) in the palette to select it.

3) Hold down [Ctrl] and double-left-click on any one of the black cells in the grid to change all the black cells to red.

4) Double-click on frame 01 to copy that frame into the next empty frame box. Frame 02 is then automatically selected and highlighted.

5) Click on the green color (Color: 02) in the palette, hold down [Ctrl] and double-left-click on any one of the red cells to turn them all to green.

6) Double-click on frame 02 to copy that frame into the next empty frame box. Frame 03 is then automatically selected and highlighted.

7) Click on the blue color (Color: 03) in the palette, hold down [Ctrl] and double-left-click on any one of the green cells to turn them all to blue.

8) Double-click on the scene button to run it, adjust the speed and slope faders to suit and you will see the grid changing colors as selected.

9) Stop the scene, hold down [Ctrl] and right-click once on Opt: ***Down*** to change it to ***Up***. Run the scene again and the colors will chase from blue to green to red i.e. the frames are running in the order; 3, 2, 1, 3, 2, 1 etc.

10) Stop the scene, hold down [Ctrl] and right-click once on Run: ***Cont*** to change it to ***01***. Run the scene again and the colors will chase from blue to green to red once and it will then stop automatically.

Let's create another slightly more complex chase where red, green and blue colors are scrolled across the grid:

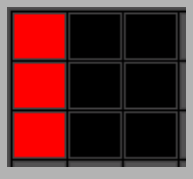
1) Exit the ColorScene panel to the normal scene panel.

2) Highlight the *Scene A002* button and click on the CScn button to enter the ColorScene panel again.

3) This time we will assume we are using a 3 x 3 grid, so highlight the first fixture fader, click on the second patch symbol - Patch: ***01 Grid: L,R,L,R,*** and then double-click on the first cell. This will then patch fixtures 1 to 9 to the grid thus:

1	2	3
4	5	6
7	8	9

4) Double-click on ***Set*** to insert the first frame, click on the color red (third color palette box) and draw this color vertically down the first column of cells.



Our current frame

5) Double-click on the first frame box (01) to make a copy of that frame in the next empty frame box. 02 is then shown in the second frame box.

6) With frame 02 highlighted, right-click once on the SX display (short for **S**croll on **X** axis) and this will scroll the colors to the right.

7) Click on the green color in the palette and draw this down the first column.

8) Double-click on the frame 02 box to make a copy of that frame in the next empty frame box - 03 and with frame 03 highlighted right-click on SX to scroll the colors to the right, select blue and draw it down the first column.

9) Double-click on the frame 03 box to make a copy of that frame in the next empty frame box - 04 and with frame 04 highlighted right-click on SX to scroll the colors to the right. You will notice that the first column now contains the red color that was scrolled off the right of the grid.

10) For this chase we want the red, green and blue columns to appear from the left, scroll right across the grid and then disappear off the grid to the right. So, for frame 04 simply select black and draw down the first, red column - this will set that first column in that frame back to black.

11) Double-click on the frame 04 box to make a copy of that frame in the next empty frame box - 05 and with frame 05 highlighted right-click on SX to scroll the colors to the right. You will notice that the first column now contains the green color that was scrolled off the right of the grid. Drag down the first column with the mouse to make it black.

12) Double-click on the frame 05 box to make a copy of that frame in the next empty frame box - 06 and drag down the last column with the mouse to make it black

Now when you run that ColorScene the RGB columns will scroll into the grid from the left and out of the right.

You will notice that when you first run this ColorScene, red appears in the first column, instantly followed by green and then (after the time determined by the ColorScene's speed setting) blue follows after that and so on. This is because the In: and Out: settings on the right of the top details display are both set to ***Scene*** and the scene fade In: and Out: times on the left of the details display are both set to *00:00:00* - the default.

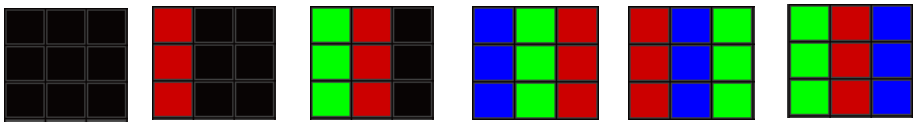
If you want the first frame to come in, hold for the duration set by the speed fader, followed by the second frame and so on then set both the In: & Out: to ***Spd***. - the initial In: time (when the ColorScene chase is first run) and the last Out: time (when the ColorScene chase is told to go off) will then be determined by the speed setting of that ColorScene chase.

Using [Insert] and [Delete]

We should have had the first frame in the last chase we created set to black rather than the last frame, so that when the chase is first run the grid begins in black, then red appears, followed by green etc. This is no problem, simply highlight the first frame box, press [Insert] and confirm. An empty frame will then be inserted into frame box 01, with the rest of the frame numbers shifted up by one. Then simply highlight the last frame, press [Delete] and confirm.

Setting a Loop Point

You may want a ColorScene chase to start in a particular way and then loop between certain consecutive frames until it is stooped. For example: You may want to start with a black grid then introduce a column of red, followed by green, followed by blue (as in the previous example), however at this point you want the colors to now wrap around the grid until the chase is stopped. Here are six sample grid frames (using a 3x3 grid and RGB columns) that would achieve that effect:



However, if you were to run this ColorScene chase as it is, frames 01 to 06 would run the first time which is good, but when the chase repeats it would start at frame 01 again (black) which is what we don't want.

If you look at the frame 01 box you will notice that, unlike the other frame boxes, it is colored light blue. This is a loop point marker that defaults to the first frame. The sequence of frames that would achieve the effect we are after is: 1, 2, 3, 4, 5, 6, 4, 5, 6, 4, 5, 6 and so on, i.e. after the R, G and B columns have been initially brought onto the black grid the frames should then loop between frames 04 to 06. Double-right-clicking on frame 04 will set that frame to be the repeat loop point and achieve this effect.

Duplicating and Adjusting ColorScene Chases

ColorScenes are palette-based with each ColorScene having its own definable palette. This can be very useful if you want to create a few ColorScene chases that use the same 'animations' (such as having a colored block running along a length of LED fixtures), but you want each ColorScene to use a different color.

The quickest and easiest way to do this is as follows:

1) Create the first ColorScene chase, in red for instance, on Scene button *A001*.

2) Exit the ColorScene panel to return to the normal Scene panel.

3) If you want to replicate the red ColorScene to provide the same animation in green & then blue, then simply drag the red ColorScene button (*A001*) onto the next two empty scene buttons (*A002* & *A003*) to create two copies.

4) Highlight scene button *A002* and click on the button labelled CScn to produce the ColorScene panel.

5) Now simply click on the color box containing red in the palette and replace it with green. If you run that ColorScene you will then see the same animation, but now running in green.

6) Repeat steps 4 and 5 using scene button *A003* and the color blue.

Using Dimmers in ColorScene

We will re-create the above ColorScene chase, but this time we will use fixtures with R, G, B and dimmer functions so that we can dim up each of the red, green and blue columns as they are brought onto the grid.

1) Copy the above ColorScene scene button onto another empty scene button, select that new button and click on CScn to go to the ColorScene panel - we have already created a color palette and seven frames, so it is quicker to copy the ColorScene and then modify it.

2) We need to create and patch 9 new fixtures that contain R,G,B and dimmer functions so select Options > Patch Screen, highlight fader 025 and select A > Abstract > AVR series > LEDion from the Fixtures menu.

3) Press [F12] (the copy fader function) and type [25] [+] [8] [Return] to copy another 8 fixtures of the same type to fader numbers 026 to 033.

4) Now that we have 9 fixtures that possess R, G, B and Dimmer functions we can soft patch these fixtures in ColorScene, so select Options > Main Screen to return to the main screen.

5) With the ColorScene panel still shown, select fixture 25 on the fixture panel and click on the Patch button on the ColorScene panel. Select the Grid: LR,LR soft-patch option and double click anywhere in the active grid to soft-patch the fixtures to the grid.

If you now run that ColorScene you will notice that it will do the same chase as the ColorScene it was copied from, but it is applied to fixtures 25 to 33 instead. You will also notice that the dimmer functions for the fixtures are automatically set to full so that the LED colors can be seen at full brightness.

We will now modify this ColorScene chase using the dimmer function so that each of the colored columns will grow brighter as they move from left to right across the grid. When the color first appears on the left of the grid it will appear at 50% brightness, when it moves to the centre column it will increase to 75% and when it moves to the right column it will be at 100%:

1) Right-click on the Color button to change it to Dim, the color palette will then change into a dimmer palette and the two faders at the top will change into a sub-master fader - that controls the overall dimmer levels and a slope fader - that controls the slope for dimmer channels.

2) Click on the third box in the dimmer palette - in a similar way to the color palette, the first and second boxes are fixed at 000 (off) and 255 (full brightness) respectively. Dimmer levels for each box in the dimmer palette can be set by moving the dimmer function fader on the fixture panel for any of the fixtures used on the grid to the desired level (or selecting a preset using the presets panel) and double-clicking in the box to store it. For this example, store 75% in the Dim: ***01*** box and 50% in the Dim: ***02*** box.

3) Select the frame 02 box, click on the Dim: ***02*** box and draw down the first red column. This will set the level of that red column to 50%.

4) Select the frame 03 box and draw down the left green column to set it to 50%. Click on the Dim: ***01*** box and draw down the middle red column to set it to 75%.

5) Select the frame 04 box and draw down the middle green column to set it to 75%. Click on the Dim: ***02*** box and draw down the first blue column to set it to 50%. The right red column is at 100%, which is OK.

6) Select the frame 05 box and draw down the first red column to set it to 50%. Click on the Dim: ***01*** box and draw down the middle blue column to set it to 75%. The right green column is at 100%, which is OK.

7) Select the frame 06 box and draw down the middle red column to set it to 75%. Click on the Dim: ***02*** box and draw down the first green column to set it to 50%. The right blue column is at 100%, which is what we want.

Now, when you run that ColorScene chase the colored columns will increase in brightness as they are scrolled from left to right across the grid.

Using ColorScene with Colored Generic Lights

The dimmer function in ColorScene can be used effectively for generic fixtures. Let us assume that you are using 8 par cans (4 on each side of a stage). The innermost cans have yellow gels, the cans next to them have green gels, the ones next to those have blue gels and the outermost cans are red:

1) Select New Desk from the File menu to create a new, empty desk.

2) Go to the patch screen and patch 8 par cans to fixture faders 001 to 008.

3) Go back to the main screen, highlight the empty scene button *A001* and click on the CScn button to call up the ColorScene panel.

4) We will create a grid of 12 cells across by 12 deep so that we can represent our two lines of four cans on each side with a gap of four cells in-between. Right-click on ***X03*** nine times to increase it to ***X12***, then right-click on ***Y03*** nine times to decrease it to ***Y12***. We are only going to use one row of 12 cells but making the grid 12 x 12 keeps the cells square. It also shows that you can position multiple rows or groups of fixtures on different sections of the grid and use ColorScene to apply effects across multiple groups of fixtures, i.e. you can roughly simulate the actual physical layout of your fixtures.

5) Click on fixture 1 on the fixture panel, decide on which grid row you want to place your 8 par cans and click on the cell 1 in that row to soft-patch that fixture to that cell.

6) Soft-patch fixtures 2 to 4 to cells 2 to 4 in the same way.

7) Highlight fixture 5 and double-click on cell 9. Do likewise for fixtures 6, 7 and 8 to soft-patch them to cells 9, 10 and 11 respectively. We now have fixtures 1 to 8 soft-patched to cells 1, 2, 3, 4, 9, 10, 11 and 12 respectively.

Because par cans are single channel dimming fixtures that use colored gels their colors are always fixed and you can only create ColorScene chases for the dimmer function of these fixtures. However, it would be very useful if the colors of the par cans could be represented on the grid to observe the effect of those colors dimming. For this reason, you can set a color for each cell in the grid that is fixed for generic fixtures. This is done using the first frame of the ***Frame*** ColorScene chase in the following way:

1) Click on the Sf frame to select it - it should already be selected as this is a new chase and no new frames have been created yet. The cells containing generic fixtures will then be shown black - ready for coloring. ColorScene automatically goes into Color mode when the ***Set*** frame is highlighted as this frame is used just to set fixed colors for generic fixtures.

   Please Note:
   If you are mixing RGB fixtures and generic fixtures on the same grid then please read the notes in "Notes on Mixing Generic and RGB / CMY Fixtures on the Same Grid", p.89.

2) You can edit the color palette in the ***Set*** frame in the normal way, but the default palette possesses the colors we need so we will stick with it. Par cans 1 and 8 have red gels so click on the red color box then click on cells 1 and 12 to color them red.

3) Cans 2 and 7 are colored blue, so select blue in the palette and then click on cells 2 and 11 to color them blue.

4) Cans 3 and 6 are colored green, so select green in the color palette and then click on cells 3 and 10 to color them green.

5) Cans 4 and 5 are colored yellow, so select yellow in the color palette and then click on cells 4 and 9 to color them yellow. The colors for each cell in the grid are now set.

6) If you intended to create a number of ColorScene chases with this layout of colored par cans then you should exit the ColorScene panel at this point and drag and drop this scene onto a few more empty scene buttons to copy the soft-patch and color palette set-up to those scenes. In this way, you don't have to create that set-up again from scratch for each new scene.

Let's now create a ColorScene dimming chase for scene button *A001* in which the par cans come on - from the centre par cans outwards - and then diminish to give the effect of a 'trail' of brightness pulsing outwards. The dimming levels we will use are 000 (off), 064 (25%), 128 (50%), 192 (75%) and 255 (100%):

1) Click on scene *A001* and click on the CScn button to go to the ColorScene panel.

2) There are no frames created yet for this ColorScene so double-click on ***Set*** to create a new frame. You will notice that the Color button changes to a Dim button because ShowMagic knows that none of the fixtures used on that ColorScene grid possess RGB or CMY functions. The color palette is also changed to a dimmer palette.

3) As with the color palette the first two dimmer level boxes in the dimmer palette are fixed at 000 and 255. Click on the third box, move one of the dimmer faders for the par cans on the fixture panel to ***192*** (75%) and double-click in that dimmer box to store it.

4) Do likewise for boxes 4 & 5 storing levels of ***128*** (50%) and ***064*** (25%) respectively. We now have 5 dimmer levels - 000, 255, 192, 128 & 064 that we can use in our dimmer chase for those par cans.

5) We will have the first frame set to black so click on the first dimmer palette box (***000***), and drag the mouse across cells 1 - 12 to set them to black.

6) Double-click on frame 01 to add another frame.

7) With Frame: 02 selected, click on the 2nd dimmer box (dimmer level 255) and then click on the 4th and 9th cells to set them to a dimmer level of 255. They will then be shown as a bright yellow.

8) Double-click on the Frame: 02 box to add another frame, click on the 3rd and 10th cells to set them to 255 (bright blue), then click on the 3rd dimmer palette box to select a level of 192 and click on the 4th and 9th cells to set them to 192.

9) Double-click on the Frame: 03 box to add another frame, click on the 2nd dimmer palette box (255), click on the 2nd and 11th cells to set them to 255 (bright green), click on the 3rd dimmer palette box to select a dimmer level of 192, click on the 3rd and 10th cells to set them to 192, click on the 4th dimmer palette box to select 128 and then click on the 4th and 9th cells to set them to 128.

10) Double-click on the Frame: 04 box to add another frame, click on the 2nd dimmer palette box, click on the 1st and 12th cells to set them to 255, click on the 3rd dimmer palette box to select a dimmer level of 1192, click on the 2nd and 11th cells to set them to 192, click on the 4th dimmer palette box to select 128, click on the 3rd and 10th cells to set them to 128, click on the 5th dimmer palette box to select 64 and then click on the 4th and 9th cells to set them to 64.

11) Double-click on the Frame: 05 box to add another frame, click on the 3rd dimmer palette box to select 192, click on the 1st and 12th cells to set them to 192, click on the 4th dimmer palette box to select 128, click on the 2nd and 11th cells to set them to 128, click on the 5th dimmer palette box and click on the 3rd and 10th cells to set them to 64, click on the 1st dimmer palette box and click on cells 4 and 9 to set them to 000.

12) Double-click on the Frame: 06 box to add another frame, click on the 4th dimmer palette box to select 128, click on the 1st and 12th cells to set them to 128, click on the 5th dimmer palette box to select 64, click on the 2nd and 11th cells to set them to 64, click on the 1st dimmer palette box and click on cells 3, 4, 9 and 10 to set them to 000.

13) Double-click on the Frame: 07 box to add another frame, click on the 5th dimmer palette box to select 64, click on the 1st and 12th cells to set them to 64, click on the 1st dimmer palette box and click on cells 2, 3, 4, 9, 10 and 11 to set them to 000.

If you now run that ColorScene you will see the cells brighten from the centre outwards and diminish leaving a comet type trail.

In future versions of ShowMagic, ‘automatic’ chase effects will be provided that will apply specific dimming algorithms to the grid without the need to create them manually frame-by-frame. This will speed up the programming process considerably more for specific commonly used effects but, as with the color algorithms, it is impossible to create algorithms to suit *every* conceivable effect that may be required in the future so the ***Frame*** option has been made available first to allow for this.

Notes on Mixing Generic and RGB / CMY Fixtures on the Same Grid

- Cells containing RGB / CMY fixtures are shown in grey rather than black on the *Set* frame - this is because fixed colors cannot be applied to them.

- When creating frames, clicking on a cell containing a generic fixture will automatically change the mode button from Color to Dim because colors from the palette cannot be applied to generic fixtures - only dimmer levels from the dimmer palette.

- You cannot change the mode button from Dim to Color when a cell containing a generic fixture is selected in the grid. If you want to use the Color mode for cells containing RGB / CMY fixtures then a cell containing an RGB / CMY fixture must first be selected.

- Use a right-click on a cell to just select it - this avoids any dimmer / color changes being applied to that cell.

- When a cell containing an RGB / CMY fixture is selected, right-clicking on the Color button toggles it between Color and Dim modes. Right-clicking on the Color button with a generic fixture selected has no effect.

- To change the fixed colors on the grid for generic fixtures the ***Set*** frame - Sf - must be selected and used.

Section 8 - Sound Panel

The sound panel

This contains a page of 24 sound event buttons to which sound events can be assigned. Page selector buttons allow access to pages of 24 buttons each. A details display, fader for adjusting stereo balance, volume fader, mute button, audio-type selector buttons and motor control buttons are also provided.

Up to six types of sound events are available on a soundblaster-compatible soundcard - depending on the particular soundcard; Digital audio files - .ac3 (surround-sound), .wav, .mp3, .wma or .aif files (all these different standards are referred to simply as 'wave' files in this manual), MIDI files, Audio CD tracks, Digital input, Line level input and Microphone level input. All these types of sound event can be played at the same time (or overlapped), with independent volume fade-up, fade-down and stereo balance selectable for each.

If you are using ShowMagic SL Free Edition with a multiple-output soundcard with ASIO drivers, up to 8 .wav files can be played and synchronized on fixed outputs 1 to 8. On the other models up to 16 .wav files can be played on multiple, selectable outputs.

Mixer setting events are also available, which allow you to store and recall the settings of the audio sub-master faders on the Master panel. A sound event can be set to do any one of the following if your soundcard supports it and is correctly set up in Windows on your PC:

- Play wave files off any of the PC's hard disks.
- Play a '.mid' MIDI file off any of the PC's hard disks.
- Play tracks from a CD in the PC CDROM drive.
- Select digital audio input from the digital input socket.
- Select audio input from the line level socket.
- Select audio input from the microphone level socket.
- Adjust the levels of the audio faders on the Master panel.

Mute buttons under the faders on the Master panel can be used to toggle mute on and off for each channel independently, this does not stop sound events from playing, it simply turns off the output volume. The type of audio for each mute button on the Master panel is shown as: **Wv** for Wave, **Md** for MIDI, **CD** for CDROM, **Ln** for line input and **Mc** for microphone input.

DirectShow and ASIO ‘Channels’

ShowMagic supports 2 different types of audio drivers - DirectShow drivers and ASIO drivers. Either or both of these drivers may be available for one or more of the audio outputs on the soundcard depending on the audio hardware you are using. For instance, with an M-Audio Delta 1010 multiple output soundcard there are DirectShow drivers available for analogue outputs 1 to 8 and ASIO drivers available for analogue outputs 1 to 8. Both these drivers ‘share’ the same physical outputs on the card. Where there are DirectShow drivers available for the physical audio outputs, we refer to these herein as ‘DirectShow channels’. Similarly, where there are ASIO drivers available for the physical audio outputs, we refer to these herein as ‘ASIO channels’.

Microsoft ‘DirectShow’ Drivers

Audio files in uncompressed ‘.wav’ file format, and audio files in ‘.mp3’, ‘.wma’ or ‘.aif’ compressed formats can all be played by ShowMagic using any available outputs with DirectShow drivers. On the ‘Default’ Directshow channels (as selected on the Windows ‘Sound and Audio Devices’ dialogue box) multiple files (of multiple types) can be played at the same time.

Please Note:

On any other DirectShow channels (other than the default) only one audio file can be played at any one time. If an audio file is started - that uses the same channels as another audio file that is already playing on those channels - the previous audio file is stopped.

ASIO Drivers

ASIO drivers only support playback of un-compressed .wav files, but the advantage of using ASIO outputs is that multiple uncompressed wave (.wav) files can be played to any of the multiple audio outputs (with up to 16 channels synchronized).

As described later in this manual, any available DirectShow or ASIO channels that ShowMagic finds are listed in a pop-up menu, and can be selected for routing your audio files.

Please Note:

Not all soundcards that have more than 2 audio outputs allow you to adjust the volume levels on the DirectShow channels using the ShowMagic volume faders. This is dependent on the soundcard and its drivers.

The Audio-Type Selector Buttons

Wave file selector - .wav, .mp3, .wma, .ac3 or .aif.

MIDI file selector - .mid files.

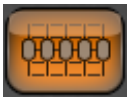
Audio CD tracks selector

Digital input selector.

Line level input selector.

Microphone level input selector.

The first three audio types are automatically assigned to the three ‘internal’ audio OUTPUT devices: wave, MIDI and CD respectively. The next three types are INPUT devices: the fourth is assigned to the digital input on the soundcard if it exists; The fifth type is assigned to the line level input on the soundcard if it exists; and lastly, the sixth type is assigned to the microphone level input on the soundcard if available. If any of the above are not available on your soundcard, or if the soundcard is not correctly set up on your PC, then the appropriate button is left blank and that type of sound event will not be available.



This last selector button is used when creating a Mixer Setting event as described in "Mixer Setting Events", p.99.

Sound Motor Control Buttons

Motor control buttons can be used - depending on the sound event type - to play, pause or stop a sound event. The pause button can also be used to ‘hot start’ a sound event - simply highlight the sound event button and click on the pause button. When the pause button has illuminated clicking **Go** (or pressing [Spacebar] if the sound panel is on the left) will start the sound instantly.

Creating Sound Events

1) Highlight a sound event button by clicking on it, double-click on the audio-type button that is appropriate for the type of sound event that you wish to create for that event: i.e. to create a wave file playback event double-click on the ‘wave’ type selector button.

2) If a wave or MIDI file event is being selected, a file selector appears. Select the appropriate file and click on **Open**, the file details will then be shown in the details display. If a CD is being selected, then the CD in the CDROM drive is read and the details of the CD are shown in the details display.

That sound event is now assigned to that sound event button. The settings for that sound event can be made via the details display as described on the next few pages. For every type of sound event the first row in the top details display shows the sound event number and its label. The other rows in the details display are described on the next few pages for each type of sound event:

Wave File / Playlist

a) The second row in the details display shows the type of event i.e. Aud: ***Wave***.

Right-clicking on the pink description to the right of ***Wave*** produces a pop-up menu on which you can select the audio channels (either DirectShow or ASIO) to use for that wave file or playlist event.

b) The third row in the details display contains the file details, e.g. File*: C:\AVSS\ShowMagic\wavefile\Cash1.wav*

The length of that file in minutes, seconds and frames and the From and To play times: these are the time positions within the file that the event will play from and to. These default to the start of the file and the end of the file, but can be changed by holding down [Ctrl] and left / right-clicking on the time digits to decrement/increment them.

If ***LP*** is highlighted (click on it with [Ctrl] held down to toggle it on / off) then that sound event will repeat in a loop until the event is turned off.

c) The fourth row in the details display contains the volume fade In and fade Out times in seconds and frames. The default is *00.00* for both, but can be changed by holding down [Ctrl] and left / right-clicking on the time digits to decrement / increment them.

d) To the right of the fade times is a ***bpm*** (Beats Per Minute) setting - see "Beats Per Minute Counter", p.100.

e) The Plist setting (above the motor controls) can be used to play a folder full of wave files as a playlist. Let's assume you have jazz, rock and classical music tracks stored on disk as .wav files and you wish to create 3 playlists - one for each style of music:

1. Create a file folder called 'Jazz' and copy the jazz tracks into this folder. Do the same for the rock and classical tracks copying them into folders called 'Rock' and 'Classical' respectively. You now have 3 folders containing the 3 different styles of music tracks.

2. Highlight any empty sound event button and double-click on the wave file selector button - a file selector appears. Select a file in the 'Jazz' folder and click on **Open**, the file details will then be shown in the details display.

Set audio playlist dialogue box

3. Hold down [Ctrl] and click on ***Off*** to the right of Plist - a Set Audio Playlist dialogue box will then appear.

4. Playlist - Select ***Linear Playlist*** if you want the tracks to play in the same linear order, or select ***Random Playlist*** if you want the tracks to be played in a random order each time the playlist is run or looped.

5. Track Length - You can select ***Track Length*** which will play each track for its total

length, or set a *maximum* track length between 1 to 5 minutes to restrict the length of each track if required. If a track is shorter than the maximum length, then the next track is played as soon as the current track finishes - with any cross-fade settings taken into account i.e. there are no silent periods.

6. If you tick XFade On (cross-fade), the In and Out times set in the details display for that sound event will be used to cross-fade between each track. E.g. if the In and Out times are both set to *02.00* then 2 seconds before its end, the current track will start to fade out over 2 seconds and the next track will start to fade in over 2 seconds.

7. Sequence Insert - Introduced in version 12.0, this option enables you to 'insert' and play a sequence between tracks after an interval selectable in minutes (up to 999 minutes). This could be used for playing regular voice announcements, adverts etc. Because a sequence is used as an insert, any ShowMagic events, or combination of events, can be played in the inserts e.g. a digital sign can be displayed whilst an audio announcement is made etc. This makes it very versatile, but simple to use.

Notes on using Sequence Inserts

a) When a playlist contains a 'Sequence Insert' ShowMagic will check when the chosen interval has passed - since the last insert was played - and will then run the sequence insert as soon as the currently playing track has finished.

b) When a sequence insert is running from a playlist, that playlist is paused. When the sequence insert has finished, the playlist is taken out of pause and continues with the next track in the playlist.

c) A sequence insert must be either a ***Timed*** sequence or a ***Random*** sequence set to Type: ***Rnd/Sel*** and Run: ***Once***. If the sequence is a ***Rnd/Sel*** sequence it must only contain steps that are all events with a 'finite' duration. i.e. ***Timed*** sequences, sound events, video file events, captured video with a selected To: time, digital signs with an Off: duration set etc. If ShowMagic finds any events that do not have a finite duration (events set to loop, for instance), then ShowMagic will ignore them and not play them because that sequence insert once started would not stop and ShowMagic could not return to playing the playlist whilst the sequence insert was playing.

d) If the sequence insert is a ***Rnd/Sel*** sequence, a different event will be played each time the sequence insert is run from the playlist.

To assign a sequence to a playlist as a sequence insert, do the following:

i) Drag the sequence button from the sequence panel and drop it into the Plist: window. If the sequence is not a ***Rnd/Sel*** sequence or a ***Timed*** sequence then this action has no effect.

ii) Hold down [Ctrl] and click to the right of Plist: to call up the Set Audio Playlist dialogue box.

iii) Tick the On box to the left of the Sequence Insert name.

iv) Type in the interval, in minutes, at which you want the sequence insert to run. Any value can be used between ***1*** and ***999***.

8. When you click on the **Set** button there will be a delay (proportional to the number of tracks in the selected folder) whilst ShowMagic examines all the audio files in the folder and calculates the overall duration of the playlist. When the dialogue box disappears, the playlist is ready to run. Note: if there are a large number

of files in the folder this can take some time.

9. If you hold down [Ctrl] and click on ***LP*** (LooP) in the details display (to highlight it in light blue) the playlist will repeat continuously until it is stopped. Note: if the playlist is set to Random Playlist then each time the playlist is played it will pick the next track in the folder to play randomly, but it only plays each track once until all the tracks in the folder have been played. It then starts again with a new random track order.

When the playlist option has been selected for a sound event, the information in the details display changes to show the following:

Playlist details display

a) The first row shows the sound event number and its label as normal.

b) The second row shows the type of sound event (Wave) and the channels it is set to play on (shown in pink). If you are playing playlists on the 'Default' outputs the tracks in the folder can be a mixture of .wav, .mp3, .wma files etc.

c) Different playlists can be played to different 'DirectShow' or ASIO audio channels.

Please Note:
If you select ASIO channels the tracks being played must be in uncompressed .wav file format - compressed audio files such as .mp3, .wma etc. are not supported on ASIO channels. See "Playing Multiple Playlists", p., for more details.

d) The third row displays Dir*:* (directory of the folder where the tracks are stored) rather then the File*:* (filename) of a single digital audio file.

e) The fourth, Len*:* (length) row displays the total time duration of the playlist (allowing for any cross-fade timings) rather than the length of a single digital audio file.

f) Files*:* ***nn.*** This shows the number (nn) of tracks in the selected folder.

g) The ***LP*** (loop) option, if highlighted in light blue, indicates that looping is set to on. If shown dark blue then looping is set to off (will play the playlist only once).

h) The fifth row shows the In and Out times - these are normally used to set the fade-in and fade-out times of single sound events, but with the playlist selected, these denote the cross-fade times between tracks.

i) The item to the right of Plist: denotes the following:

Lin - the tracks in the playlist folder will be played in a linear order each time.

Rnd - the tracks in the playlist folder will be played in a random order each time.

j) When the playlist is playing, the blue value to the right of the Plist setting shows what track number is playing and the value in white to the right of that shows the current running time for that track.

MIDI File

a) The second row shows the type of event i.e. Aud: ***Midi***. Right-clicking on the pink description to the right of ***Midi*** produces a pop-up menu on which you can select the output device for that MIDI file event e.g. soundcard synth output or MIDI output port etc.

b) The third row contains the file details, e.g. File: *C:\Windows\Media\Town.mid*

c) The length of that file in minutes, seconds and frames and the From and To play times: these are the time positions within the file that the event will play from and to. These default to the start of the file and the end of the file, but can be changed by holding down [Ctrl] and left / right-clicking on the time digits to decrement / increment them.

MIDI track listing on the audio panel

d) If ***LP*** is highlighted (click on it with [Ctrl] held down to toggle it on / off) then that sound event will repeat in a loop until the event is turned off.

e) The fourth row contains the volume fade In and fade Out times in seconds and frames. The default is *00.00* for both, but can be changed by holding down [Ctrl] and left / right-clicking on the time digits to decrement/increment them.

f) The playlist function is not available for MIDI files, so ***Off*** is shown and cannot be changed.

If you right-click on the MIDI sound event button the normal sound event buttons are removed and replaced with a MIDI track listing for the highlighted MIDI sound event thus:

The 'Beats Per Minute' tempo setting for that MIDI file is shown in the window below the **Ctrl** button. This BPM value can be changed by left/right-clicking on it and re-starting the MIDI sound event.

Each track can be transposed by left / right-clicking on the digits below the BPM window to decrement / increment them. The **+** symbol denotes a higher octave and the **-** symbol denotes a lower octave. Transposing is then applied to all the tracks that have the button on their right set to blue. If you want to leave any tracks at their original pitch (e.g. drum tracks) then simply click on the button to toggle it from blue to grey.

Similarly, left-clicking on the left button for each track - to turn it red - will mute that track, and right-clicking on the left button for each track - to turn it green - will 'solo' that track. Any buttons on the left of the tracks shown in grey are un-muted.

If you are sending the MIDI sound event to a MIDI port to control an external MIDI device then double-click on the **Ctrl** button to turn it red. No volume / transposition changes will then be made to affect the original MIDI data going to the device.

Finally, right-clicking anywhere in the tracks area, or clicking on the **Exit** button, will close the track list and return the display to the normal sound event buttons.

CD Tracks

a) The second row shows the type of event i.e. Aud: *Internal CD*.

b) The third row shows the number of tracks on the CD and the total running time of those tracks.

c) The fourth row shows the range of tracks to play (defaults to *All*) and the total running time of that range of tracks. Right-clicking (with [Ctrl]) to the right of Play: will change the display to show the track number to play from and the track number to play To. Left or right-click on these track numbers (with [Ctrl]) to adjust them. Clicking on RND (with [Ctrl]) will toggle between enabled (bright blue) or disabled (dark blue). When enabled ShowMagic will randomly pick the order in which to play those tracks. In the same way, the LP (loop) option can be enabled/disabled to continuously loop the sequential or random playing of those tracks.

d) The fade In and fade Out times in seconds and frames - default for both = *00.00*. These In and Out times affect how the CD playback starts and finishes - it does not affect each track, it just fades in the first track in the selected range and fades out the last track in the selected range. The fading of each track is pre-determined on the music CD itself. If a CD sound event's track range is set to *All* and you change the CD in the drive, clicking on the play button will automatically refresh the details display for the currently loaded CD first before playing it.

Digital, Line and Microphone Input

a) The second row shows the type of event e.g. Aud*:* ***Microphone***.

b) The fade In and Out times default to ***00.00*** and can be used to open and close the inputs over a duration of seconds and frames.

Running a sound event button containing Digital, Line or Microphone Inputs, will open that input and turning off the event will close it.

The label for any sound event can be edited in the details display in the normal way, and values or 'time' settings can be edited by clicking on them to decrement the value, or right-clicking on them to increment it (with the [Ctrl] key held down in both cases). For example, if you wished to start a wave file 10 seconds into the file, you would simply hold down the [Ctrl] key and right-click on the From seconds digits to increase them from *00:00.00* to *00:10.00*.

The volume fader is used to set the playback volume for that sound event and double-clicking the mute button directly below it toggles mute on and off to turn off the output volume.

Sliding the pan fader up past the halfway mark (centre) pans the stereo image of that sound event to the left, sliding it down past the halfway mark pans it to the right.

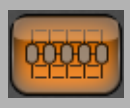
Motor Controls

With output sound events, clicking on the **Play** button plays the event from the From time position to the To time position. In the case of input sound events however, **Play** simply opens the channel, and **Stop** closes it.

The From and To values can also be set in real time by pressing the **Play** button, to play it, and then clicking on any of the From digits, whilst holding down [Ctrl], at the moment that you wish the event to start. The time position within the sound event at that moment will then be stored as the From setting. The To setting can also be set in the same way by clicking on any of the To digits, with [Ctrl] held down, at the moment within the playback of the event that you wish it to stop. The From and To settings can later be tweaked in the normal way (to the nearest 25th of a second) by holding down the [Ctrl] key and then clicking or right-clicking to decrement or increment the values at any time when the event is not actually playing.

Mixer Setting Events

This type of sound event can be used for adjusting the volume of any or all of the audio output sub-master faders on the Master panel.



The mixer setting selector button

To create a Mixer Setting sound event do the following:

1) Highlight an empty sound event button.

2) Double-click on the Mixer Setting selector button

The following settings can then be seen in the details display:

Label

The number for that sound event, **001** etc. and a label that can be edited in the same way as described previously.

Sel

The level of any or all the audio channel faders on the Master panel can be adjusted, or their mute buttons turned on or off, and stored as part of that mixer setting event by holding down [Ctrl], clicking on its label (***Wv***, ***Md*** etc.) to highlight it and adjusting the volume fader on the sound panel. When that Mixer Setting event is then turned on the audio faders on the Master panel will be adjusted to those settings.

Res

Restore - If this is set to ***On*** then the audio faders will be restored to their previous settings (the settings that they were at before this mixer settings event was run) after the Mixer Setting event is turned off, otherwise they will remain at those settings.

In

An In time can be set here which determines the time between the original settings fading out and the mixer settings in this event fading in.

Out

An Out time can be set here which determines the time between the mixer settings in this event fading out when it is turned off and the original mixer settings fading back in (if Res***: On*** is set).

Beats Per Minute Counter

The beats per minute counter in the details display can be used to store up to 8 different bpm settings for each sound event.

If you were creating lighting chases to run with this particular sound event (wave file or MIDI file) you might wish to create a pan and tilt ***Chase*** with a BPM setting that follows every beat, a color chase which is set to follow every other beat and a gobo chase that follows every fourth beat and so on. You might even want to set a BPM that is an odd number per bar, or offset, to the natural beat of the music, so for this reason ShowMagic enables you to log these BPM settings whilst listening to the sound event:

1) Simply left or right-click (whilst holding down [Ctrl]) on the digit to the left of the colon to select your BPM setting (1-8). This selects one of the 8 BPM ‘slots’ for that sound event.

2) Start the sound event in the normal way so that you can hear it playing.

3) Whilst holding down the [Ctrl] key, tap [Spacebar] in time to the BPM you are logging. After every four taps of the [Spacebar] ShowMagic will display the BPM setting. The displayed BPM value can then be used as a reference when setting the BPM for the chase on the sequence panel.

Deleting a Sound Event

To delete a sound event, click on the button and press [Delete]. You will be prompted to confirm or cancel. If the sound event is used in any sequences you will be informed of this, and if you confirm the deletion it will be removed from all sequences that contain it.

Copying a Sound Event

To copy a sound event, drag the button, or its label from the details display, onto the button that you wish to copy it to; dropping the sound event elsewhere (e.g. back onto the same button or back into the display) will cancel the operation. If the sound events are on different pages then select two sound event panels on the desk (one on the left and the other on the right) and copy from one to the other. If the sound event button you are copying to already has a sound event stored in it, you will be prompted to confirm or cancel the overwrite.

Moving a Sound Event

To move a sound event from one button to another, drag the button onto another empty sound event button and hold down [Ctrl] before dropping it. If the original sound event button is used in any sequences, those sequences will be updated with the new sound event button number.

Using ASIO Drivers and Multiple Input / Output Soundcards

- ASIO Technology by Steinberg Media Technologies GmbH

ShowMagic includes ASIO driver support for multiple input / output soundcards such as the M-Audio Delta series.

On the SL Free Edition model, this facility enables you to play up to 8 synchronized .wav sound events out to channels 1 to 8 for multi-track, backing track, or 'DIY' surround sound type applications.

On all other models, you can play up to 16 synchronized .wav sound events out to channels 1 to 16.

You can use a multiple-output soundcard along with a normal SoundBlaster compatible soundcard in the same ShowMagic PC. In this case the SoundBlaster compatible soundcard can be treated as the *primary* soundcard and the multiple-output soundcard can be treated as a *secondary* soundcard. In this case, compressed audio files such as .mp3 and .wma files can only be played on any available 'DirectShow' channels - they cannot be played on the ASIO channels. Uncompressed .wav files can be played on both the DirectShow and the ASIO channels.

You can play multiple .wav files at the same time on any of the ASIO channels. You can also play multiple audio files (in compressed and un-compressed file formats) on the 'default' Directshow channels - 1 and 2 - but you can only play one audio file at once on any other DirectShow channels.

Multiple-output soundcards tend to use either a breakout cable adapter that consists of a bunch of cables with phono or jack sockets on the end, or a breakout box containing a number of phono or jack sockets.

Using ShowMagic, these outputs can be treated as stereo pairs e.g. outputs 1 and 2 are the first left and right stereo outputs, outputs 3 and 4 are the second stereo left and right outputs and so on, or each channel can be selected as a single mono output, or in any combination, at any time.

Please Note:
Channel pairs 1/2 are selectable on both primary and secondary soundcards. So, if you are using a SoundBlaster compatible primary soundcard with a single pair of outputs, and a secondary soundcard with 4 pairs of analogue outputs you will be able to select from 5 pairs of outputs - 1/2 on the primary soundcard and 1/2, 3/4, 5/6 or 7/8 on the secondary soundcard.

In order to use a multi-output soundcard with ShowMagic you need to first set it up using the Control Panel / Console utility that is supplied with the soundcard after the soundcard has been successfully installed in Windows. See "Setting up Multi I/O Soundcards", p.169, for some sample set up instructions.

Playing Multi-Tracks (Multiple, Synchronized .wav Files)

If you are using a multiple output soundcard that is supplied with ASIO drivers, you can play up to 16 synchronized .wav files on outputs 1 to 16. (limited to 8 fixed outputs on the SL Free Edition model). This can be useful if you are playing customized 'surround-sound' tracks, or backing tracks for a band (certain tracks can be sent to the drummers' headphones and others can be played to foldback speakers for other members of the band etc).

To load a multi-track sound event onto a sound event button do the following:

1) Highlight an empty sound event button.
2) Double-left-click on the ASIO selector button:

   The lower part of the sound event panel will then change to display 8 audio channel faders with their buttons labelled 01 to 08. Above these you will find File: and Channel: descriptions.

3) The selected channel selector defaults to 01. Clicking on the File: or Dir: (directory) descriptions produces a Load Wavefile dialogue box.

4) Select the .wav file that you wish to play on Channel 01.

5) Next - except on the SL Free Edition model where the output channels are fixed - you need to select which physical audio mono channel, or stereo channel pair, that file will be played on, so right-click to the right of Out: and select the physical channel from the pop-up menu.

6) Click on the channel 02 fader to highlight it and repeat steps 3 to 5 above to load the appropriate wave files on to the other channels.

7) If you want to access channel faders 09-16 (not available on the SL Free Edition model) then use the page selector buttons in the bottom left.

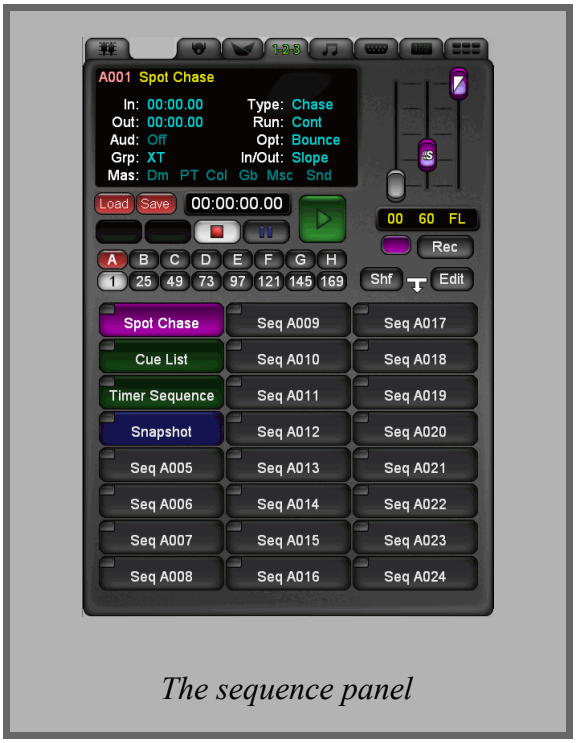
8) The levels for each channel can be adjusted by using their appropriate faders as normal.

9) **Stereo Pan Button** - If you are playing any audio files on a stereo output then the stereo pan position can be set by clicking on the **Pan** button - this will temporarily replace the volume faders with pan faders for each track - these faders can then be used to adjust the pan position for that track. Clicking on the **Pan** button again removes the pan faders - replacing them with the volume faders.

10) Finally right-click anywhere in the lower area, or click on the **Exit** button, to return to the normal sound panel buttons display.

Section 9 - Sequence Panel

This consists of a sequence settings display (top), a sequence sub-master fader and two other faders (described later) on the right of the display, with mute and record buttons below them.



The sequence panel

A **Load** button, a **Save** button and sequence motor control buttons are also provided below the display. Bank buttons *A, B* etc and the page buttons for each bank provide access to any one of the pages containing 24 sequence buttons each.

The bottom of the panel is switchable. By clicking on the **Edit** button you can view either the sequence buttons or a Live display (middle) and a Step Details display (bottom). By selecting to view the sequence buttons the running condition of groups of 24 sequences can be seen. Highlighting a particular sequence button and then clicking on the **Edit** button 'opens it up' and it shows the details for that sequence in the step details display. Alternatively, right-clicking on a sequence button will toggle between showing the live & step details displays for that sequence or the button display.

Sequence Settings

The top settings display shows the following for each sequence:

Label

The number for that sequence, *A001* etc. and a label which can be edited in the same way as described previously for fixture fader and lighting scene labels.

In

A fade In time for the sequence sub-master fader can be set here by holding down [Ctrl] and left or right-clicking on a time value to decrement or increment that value respectively. Any DMX and audio channels used by any events at the start of the sequence will then fade in over this duration if they have been set to do so as described under Mas below.

Out

The fade Out time for the sequence sub-master fader can be set here as above.

Aud (Chase only)

Five sound-to-light meters are available on the Master panel. If the **Sound To Light > On** item is ticked on the **Options** menu, then holding down the [Ctrl] key whilst left/right-clicking on the description to the right of Aud will select which frequency band will trigger the scenes in that chase. If Aud is ***Off*** sound-to-light is ignored for that chase and the speed setting in BPM is used. If the last ***Go*** option is selected, the steps in a chase are triggered by the **Go** button (or [Spacebar]).

Grp

If this sequence were to be dropped into another sequence as a step then the group setting for that step will default to the type selected here - ***XT***, ***A***, ***B*** etc. e.g. if this were a chase sequence using gobo scenes then the ***Grp*** could be set to ***G*** so as not to affect other steps containing color chase, Pan and Tilt chase etc. that were being run by the sequence. The group setting for any steps in a sequence can of course be changed at any later time in the normal way. As with the scene panel, [Ctrl] with left / right-clicking selects the group type ***EX***, ***XA***, ***XT***, ***LA*** or main group letter ***A*** to ***Z*** (shown blue) and [Shift] with left / right-clicking selects the sub-group letter ***a*** to ***z*** (shown yellow).

Mas

This determines what DMX / audio channels used in that sequence are affected by the In & Out sequence sub-master fader settings. Holding down [Ctrl] and clicking on a dark blue description (***Dm***, ***PT***, ***Col***, ***Gb, Msc*** or ***Snd***) turns it bright blue to show that it is set. ***Dm*** selects DMX channels assigned to dimmers, ***PT*** selects Pan and Tilt channels, ***Col*** selects channels assigned to color functions, ***Gb*** selects Gobo channels, ***Msc*** selects all remaining lighting channels and ***Snd*** selects sound event audio channels. Holding down [Ctrl] whilst clicking again on any of the above un-sets it (shown dark blue again) - the sub-master sequence fader and In and Out settings will not affect those channels.

Type

Holding down the [Ctrl] key whilst left / right-clicking on the description to the right of Type selects the sequence type for the currently highlighted sequence button. A sequence can be one of the following types:

- Lighting ***Chase*** shown in purple (see "Chases", p.113)
- ***Manual*** sequence shown in green ("Manual Sequences", p.113)
- ***Timed*** sequence shown in green ("Timed Sequences", p.114)
- ***Random*** sequence also shown in green ("Random Sequences", p.116)
- ***Snapshot*** shown in blue ("Snapshots", p.117). Unlike the other types of sequence this cannot be changed to another type. It is fixed as a ***Snapshot***.

Min (***Random*** sequences only)

The minimum time, in minutes and seconds up to *59:59*, that ShowMagic will wait before picking a step to activate next can be set here.

Max (***Random*** sequences only)

The maximum time, in minutes and seconds up to *59:59*, that ShowMagic will wait before randomly picking a step to activate next can be set here. As well as randomly picking the next step, the time for each step is also picked randomly within the times selected in the Min and Max settings e.g. if a Min of *00:02* seconds is set and a Max of *00:10* seconds is set then ShowMagic will pick a random time for each step between 2 and 10 seconds. If you want ShowMagic to randomly pick the next step to trigger but to do so at fixed intervals, e.g. 10 seconds, then simply set Min and Max both to *00:10*.

Run

If set to ***Cont*** (continuous) a chase, manual or timed sequence will play again from the start when it has reached the end and so on until it is turned off. If set to ***Once*** it runs only once then stops. Chases default to ***Cont*** and manual and timed sequences default to ***Once*** but either can be changed by holding down [Ctrl] and left / right-clicking on this item. Random and snapshot sequences do not use this function. In any continuous sequence, the last empty step in that sequence is automatically labelled as ***Repeat***. The last empty step in a sequence set to ***Once*** is automatically re-labelled ***End***.

Opt (***Chase*** only)

Various options are available for determining what steps in a chase are activated next. This can be set to ***Down***, ***Up***, ***Bounce*** or ***Random***. If set to ***Down*** then the chase runs down the steps in the sequence e.g. step 1, 2, 3, 1, 2, 3, etc. If set to ***Up*** then the chase runs up the sequence steps e.g. step 3, 2, 1, 3, 2, 1 etc. If set to ***Bounce*** then the chase runs down, then back up, the sequence steps e.g. step 1, 2, 3, 2, 1, 2, 3 etc. If set to ***Random*** ShowMagic randomly picks the next step to activate.

Lock (***Timed*** sequences only)

If set to ***Int*** (the default), the timings of all the event steps in that sequence are synchronized to the internal clock. If set to ***Audio***, ***Video*** or ***Step 01*** to ***Step 10***, all the steps are synchronized to the 'clocks' of those events - if those events should 'drift' for any reason then the other sequence steps will remain in sync with them. If set to ***Audio*** or ***Video*** and another of those types of event is run later in the sequence - e.g. a second video event takes over from the first - the steps in the sequence will sync to the most recently run event of that type in that sequence.

In/Out (***Chase***)

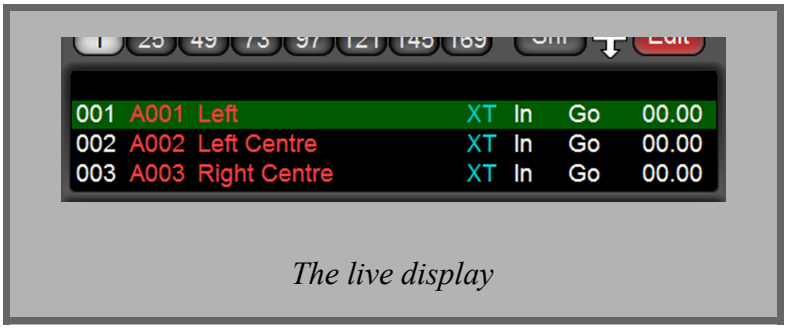
This determines whether the first and last scenes in the chase come on and go off instantly (***Instant***) or use the chase slope fader setting (***Slope***).

In/Out (***Snapshot)***

This can be set to ***Normal*** or ***Chase***. These enable you to determine how the channels shared by multiple chases can be set to blend or jump (refer to "Snapshots", p.117, for a full description).

Left / right-click on any of the above settings shown in blue, whilst holding down the [Ctrl] key, to change them.

Live Display



The live display

When the **Edit** button is used, or you right-click on a sequence button, this display shows the current step position within a running sequence (highlighted) and below that the next two steps in the sequence due to run. This display is 'live' and it is constantly updated as the sequence is running. It is therefore provided purely for information purposes as none of the details can be changed via this display. Any changes to sequence steps are made on the Step Details display as described next.

Step Details Display

Step Number

The step details display

Each event in a sequence is called a 'step' and step numbers are shown in the first column. Sequences can vary in size from a sequence containing 2 lighting scenes to a sequence containing hundreds of lighting scenes, chases, sound or control events. A total of 50,000 steps are available with a limit of 999 steps per sequence, but sequences are sized dynamically i.e.. if the first sequence uses 100 steps, there are then 49,900 steps remaining for use in other sequences. See also "Part-Step Numbering", p.131.

Ref

This shows where the event is stored e.g. scene *A001* etc.

Label

The event's label is shown in the third column.

Group

Event steps can be set to ***EX***, ***XA***, ***XT***, ***LA***, or to one of 26 'main' group letters labelled ***A*** through to ***Z*** by left / right-clicking on them with [Ctrl] held down, or by highlighting the step and then typing the group letter. These determine which events are turned off automatically when the event occurs later in a sequence. Only ***EX***, ***XT*** or ***LA*** can be set in chases.

If set to ***EX*** then this event will be ***EX***clusive in that sequence; all previous events of any type (scenes, chases, sounds etc.) are automatically turned off when this step is activated in the sequence.

If set to ***XA*** (e***X***clusive ***A***udio) then this event will turn off all events of any type, except audio events, that are running in that sequence when it is activated.

If set to ***XT*** then this will be e***X***clusive to that ***T***ype of event in that sequence; all previous events of that type (of the same color) will be automatically turned off when this step is activated in the sequence.

If set to ***LA*** then this event will be ***LA***tched; it doesn't turn off any other events and the same event must be turned off by using another step for that event set to ***Out*** or ***Off***, unless of course it is turned off automatically when any later event set to ***EX***, or the same type of event set to ***XT***, is activated.

The group letters ***A*** to ***Z*** can be used for exclusive grouping. If any events are set to ***A*** (group *A*), then the latest activated step (containing any type of event) set to ***A*** will turn off any previous event (of any type) that is set to ***A*** - all other events however, such as those set to ***LA*** or other 'main', groups such as ***B***, ***C*** etc are unaffected.

Sub-groups

Each 'main' exclusivity group letter (***A*** to ***Z***) contains 26 sub-group letters i.e. ***Aa*** to ***Az***, ***Ba*** to ***Bz*** etc. (displayed in lower case and in yellow). If an event is set to ***Aa*** and another is set to ***Ab*** then they will not affect each other. However, if an event is set to main group *A* (shown as ***A*** in blue) then this will turn off any events set to main group ***A*** and also any sub-groups of that main group letter i.e. ***A*** will turn off any events set to ***A*** or sub-groups ***Aa*** to ***Az***.

To set a sequence step to a sub-group, highlight the step, hold down [Shift] (instead of [Ctrl]) and then left / right-click to decrement / increment through the sub-group letters.

Alternatively, highlight the step and then type the main group letter followed by the sub-group letter within 1 second. To reset a sub-group back to a single, main group letter, simply type the single letter.

Action (except ***Chases***)

The action that the event should perform within the sequence is shown in the fifth column. Left / right-clicking (using [Ctrl]) on an action description selects:

In If a lighting scene, this will use any Wait and fade In settings. Similarly, if the step is a sound, or video event any fade-up settings for that event will be used.

On This will set that event to play instantly, all Wait and fade In settings for a scene will be ignored, it will come straight on at the set levels. Similarly, any fade-up settings for a sound or video event step will be ignored and the event will play immediately at its volume setting.

Out If a scene, this will use any Hold and fade Out settings. Similarly, if the step is a sound or video event any fade-down settings will be used.

Off This will set that event step to stop instantly, all Hold and fade Out settings for a scene will be ignored, the scene will go off instantly. Similarly, any fade-down settings for a sound or video event step will be ignored and the event will stop immediately.

Pa This will pause the event. See "Pausing / Resuming Events within a Manual or Timed Sequence", p.115, for detailed instructions.

Re This will resume the event if it is paused. See "Pausing / Resuming Events within a Manual or Timed Sequence", p.115, for detailed instructions.

If an event step is another sequence that contains scenes, chases and / or sound or video events, the above ***In***, ***On***, ***Out*** or ***Off*** settings will be applied to the first / last event(s) in that other sequence. Depending on the type of sequence selected, other details may be displayed on the right of the fifth column. These will be described in the appropriate sections that follow.

Keyboard Commands

Use [Up] and [Down] cursor keys to scroll through the sequence steps one by one in the step details display.

Use [Page Up] and [Page Down] keys to scroll through the steps in the display a 'Screen Page' at a time.

Use [Home] key to go to the start of the steps and [End] to go to the last steps in the sequence.

The [Tab] key can be used to toggle through and highlight settings or the sequence step display in order to edit settings or step details. Alternatively you can click on the appropriate item to highlight it.

Right-clicking in the left half of the step details display will revert back to the sequence button display.

Quick-Find Feature

Double-clicking on the Ref or Label of any event step in a sequence's step details display will put that event's panel on the other side of the desk with that particular event button highlighted to enable quick access to that event and its settings.

Creating Sequences

In order to understand how certain settings are made, it is easier if you have a small sequence created which you can work with, so to create a simple sequence do the following:

1) Create 4 simple scenes e.g. *A001* to *A004* using the fixture and scene panels or use scenes *A001* to *A004* on the demo desk.

2) Leave the scene panel on one side of the desk, and select the sequence panel on the other.

3) Highlight any one of the empty sequence buttons by clicking on it.

4) Click on the **Edit** button, or right-click on the empty sequence button, to remove the sequence buttons and view the Live and Step Details displays (contents) of that sequence.

5) Put the first scene into the sequence by dragging the scene button into the bottom of the step details display - the step where the event will be placed is highlighted as you move the dragged event over it. Dropping it elsewhere, such as back on the same scene button, will cancel the operation. If you wish to add the scene to the end of the sequence, it can be dropped anywhere below the current 'last' step. To copy it to a particular step number, simply drop it on that number's row.

6) Do likewise for scenes *2* to *4*. Then highlight any of the blank steps below the current 'last' step and press [Insert] to insert a step at the end - the last empty step in a sequence is automatically labelled as ***End***. If you did not have an ***End*** step at the end, the sequence will simply stop (or fade out) as soon as the last non-empty step is triggered.

7) Double-click on the sequences' label in the top details display and enter your own label such as *scene test*, then press [Enter] to enter it.

Dragging a Bank or Page of Lighting Scenes into a Sequence

If you drag and drop a bank selector button (marked *A, B, C* etc), or a page selector button (marked *1*, *25*, *49* etc.), from the scene panel into a sequence then that whole bank, or page, of scenes will be automatically dropped into that sequence in numerical order after confirmation.

Sequence Motor Control Buttons

Go - When the sequence step details display is shown the normal **Go** button becomes split into two: the top half of the button is a **Play** button, the bottom half is a **Play from Mark** button. The function of each half only differs when they are used to *start* sequences or to jump to sequence steps (see "Continue From Mark" p.127), otherwise both halves act as a normal **Go** button.

Play - will always play a sequence from the beginning (first step), and when a manual sequence is running clicking on this again will trigger the next step if its

trigger is set to ***Go***.

Play from Mark - will start the sequence from the step highlighted in the bottom Step Details display. If testing the last part of a long sequence, you may not want to play it right from the start each time.

Rew - Clicking, or holding down, on this button rewinds back through a sequence to an earlier step.

Fwd - Clicking, or holding down, on this button enables you to go forward through the sequence to a later step.

Stop - This is used to stop a sequence if it is running. If record mode is on this will turn it off. To view the start of the sequence in the Live display simply double-click the **Stop** button.

Pause - Clicking on this button when a sequence is running pauses the sequence and the button illuminates. Clicking on the **Go** button, or [Spacebar] if the panel is on the left, takes pause off and continues running the sequence from the position where it was paused.

Sequence Faders

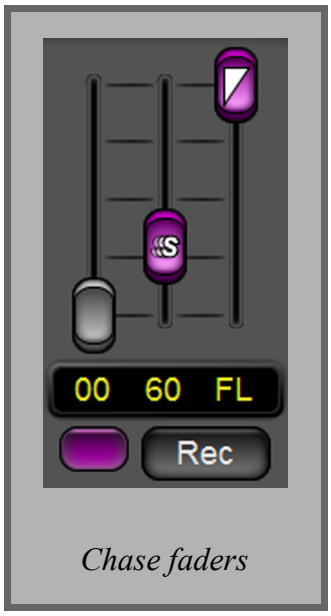
The grey fader on the sequence panel is a sub-master fader (for that sequence) and it is used to adjust the overall levels of all events in that sequence: i.e. the 'brightness' of lighting scenes and / or the volume for sound / video events. It is an independent sub-master automatically assigned to events in that sequence. The level setting defaults to ***FL*** but it can be adjusted and then stored by right-clicking on the **Rec** button. The other two faders are used for chases as described below, and for adjusting sound events as described in "Adjusting Settings for Sound Event Steps", p.121.

Mute Button

A mute button situated under the sequence sub-master slider is used to turn sound off / on if it is a sound or sound and light sequence. In addition, if ***Dim*** is set on Mas*:* for that sequence then 0 will be sent to all dimmer channels used in that sequence. If ***PT*** is set on Mas*:* then 0 will be sent to the pan and tilt channels used in that sequence and so on. Mute does not stop scenes or sound events from running, it simply turns the audio or DMX output off. It acts like a combined **GM** and **AM** button (on the Master panel) but it only affects events contained in that particular sequence. Double-clicking toggles the button on or off.

Chases

The Speed and Slope faders next to the sequence sub-master fader are normally turned off (shown in black), but if the currently highlighted sequence is set to ***Chase*** then they are made active (shown in purple). The Speed and Slope faders can be used to control or set the speed of a lighting chase (the time between scenes being activated) and the slope (cross-fade time).



Chase faders

Speed - This fader is used to select the speed of the chase in beats per minute (BPM). Scenes in the chase are executed at each beat, so at 60 (BPM) 60 scenes are executed per minute i.e. one every second.

Slope - The rate at which each scene fades in and out in a chase is selectable as a percentage of the chase speed, e.g. if a speed of 60 is set, then a slope of 50% produces fade-in and out times of half a second.

Holding down [Ctrl] whilst left / right-clicking on ***Slope*** in the sequence settings display, will select between ***Slope*** or ***Instant***. When set to ***Slope*** the first lighting scene in the chase will use the slope setting when the chase is started. When set to ***Instant*** the slope setting will be ignored for the first scene i.e. it comes on instantly first time round.

In a similar way to other types of sequence the exclusivity of scenes in a lighting chase can be set to either ***EX*** for exclusive, ***XT*** for exclusive type (scene or control event) or ***LA*** for latched. When a scene is set to ***EX*** it will turn off any other scenes in that chase that might be running. When a scene is set to ***LA*** then it will not affect any other events in that chase and it will remain on until another event set to ***EX*** or ***XT*** is run.

Chase speeds range from 1500 scenes per minute down to 1 scene every 10 minutes.

Manual Sequences

A sequence with its Type set to ***Manual*** is the type most suited to 'Live' applications where events need to be triggered manually. A ***Manual*** sequence is similar to a 'cue list' on popular theatre lighting desks.

Steps in a manual sequence can be triggered by; clicking on **Go** buttons (or pressing [Spacebar] when using the sequence or action panels on the left); or set to follow other triggered steps after specific time delays.

Go is always used to start a sequence, but when a sequence is set to ***Manual***, one of the following trigger options can be selected for each step in the sequence:

a) ***Go*** - If this is selected, you must click on the **Go** button on the sequence or action panels (or press [Spacebar] if the panel is on the left) to activate the event.

b) ***Wait*** - This selects how soon after the previous event has started that this event should wait before automatically activating. If the Wait time = ***00.00*** (0 seconds and 0 frames) then this event will activate at the same time as the previous event, i.e. the two events will occur at the same time.

c) ***Fllw*** - This determines how soon after the previous event (if it is a lighting scene or chase) has finished fading in that this event will wait before 'following on'. If the time = ***00.00*** then it will occur immediately on the previous event finishing its fade in. If the previous event is a sound, timed sequence or video event this determines how soon after the event has finished playing that this event will wait before 'following on'.

A sequence timer is shown above the motor control buttons. When any sequence is started the timer begins at ***00:00:00.00*** and increments (in hours, minutes, seconds and frames) throughout the playing of that sequence.

Using a Pause / Resume Step in a Manual Sequence

All the events (sound, sequence, video etc.) in a manual sequence - that are currently running - can be paused, and then resumed with the ***Go*** button.

To do this, insert a ***Null Step*** where you want the events to be paused, then double-click on the words ***Null Step***. The words ***Pause / Resume*** will then be displayed in white for that step. When that step is triggered using the ***Go*** button (or [Spacebar]), any running events in that manual sequence will be paused. The next click on ***Go*** (or [Spacebar]) will then take the pause off and the running events will resume from the point at which they were paused. The next ***Go*** received will then trigger the next step as normal. To change a ***Pause / Resume*** step back to a ***Null Step*** simply double-click on the words ***Pause / Resume***.

This enables you to pause that sequence using [Spacebar] or any external trigger (MIDI input etc.), instead of having to manually click on the **Pause** button.

Stopping a Sequence Step

A sequence step in a manual sequence can be stopped by highlighting the step, holding down the [Ctrl] key and left-clicking on the sequence **STOP** button.

Timed Sequences

A sequence with its Type set to ***Timed*** is the type most suited to automated shows where each step is set to occur at a pre-determined time referenced from the start of that sequence. When the last step is triggered the sequence ends, so you may need to insert a ***Null Step*** at the end with its trigger time set to the time at which you want the sequence to end. The last empty ***Null Step*** in a sequence is automatically re-labelled as ***End***. Events in a timed sequence have a default timer setting of *00:00:00.00* and these can be changed in a number of ways:

a) Highlight the event in the step details display and then type in the values in the same way as typing in fade times for scenes.

b) Hold down the [Ctrl] key and double-click on the time to set it to the same time as the previous step.

c) Set them in 'real time' using the **Rec** button as described below.

d) Use the Auto-Playlist (see "Auto-Playlist Function", p.125) and Auto-Time ("Auto-Time Function", p.126) features for auto-calculating step trigger times.

Pausing / Resuming Events within a Manual or Timed Sequence

If you are playing an event in a sequence and you want to automatically pause that event later in that sequence, simply insert a ***Null Step*** where you want the event to pause, drag and drop the same event into that ***Null Step***, hold down [Ctrl] and right-click 4 times on the ***In*** action setting to change it to ***Pa*** (***Pa***use). To resume the playing of that event, drag and drop the same event into a ***Null Step*** later in the sequence and right-click 5 times on the action setting to select ***Re*** (***Re***sume).

This feature only applies to sound or sequence events - not lighting scenes.

Recording Event Trigger Times in 'Real Time'

Trigger times for each event in a timed sequence can be entered automatically for you, using the [Spacebar] key (if the sequence panel is on the left), or clicking on the **Play** button, as follows:

1) Drag events into the Step Details display to create your sequence and then click on the **Rec** button to activate it; it will flash off and on in red to indicate that the sequence is in record mode.

2) Click on the **Play** button, or press [Spacebar], to start the sequence and the timer will begin incrementing. The first step is of course always set to *00:00:00.00.* The second step will then wait until the **Play** button is clicked again, or [Spacebar] is pressed; the time at which you clicked on **Play** or pressed [Spacebar] will then be recorded as that steps' trigger time.

3) The next step will then be highlighted in the sequence step display waiting for the next click on the **Play** button, or [Spacebar], and so on for all the events. When the stop button is used, the sequence will stop and the record button will be de-activated.

Now, pressing **Play** will run that sequence using the recorded timings. Trigger times can of course be edited manually later in the usual way. Using the **Play** and **Play from Mark** buttons, trigger times for individual steps can be set in 'real time' at any time. This need not be done in a single session.

Example:

You have set the trigger times for a four-step sequence in real time and have then pressed **Stop**. You now wish to add three more steps to the end of the sequence so you drag them in as normal. Now you wish to set the trigger times for the last three steps in real time. This can be done in two ways:

a) Highlight the fourth step in the details display, click the record (**Rec**) button and then click the bottom **Play from Mark** half of the **Go** Button. The sequence will then start from the fourth step and subsequent clicks on either half of the **Go** button, or [Spacebar], will set the times for each subsequent step until the sequence is stopped.

b) Click on the **Play** button to start the sequence from step 001. When step four has triggered at its set time (the **Fwd** and **Rew** buttons can be useful for skipping through long sections to save time), click on the **Rec** button to turn record mode on. The fifth step will then wait until the **Go** button is clicked again, or [Spacebar]. The time within the sequence at that moment will then be recorded as its trigger time and so on for the other steps.

When recording timer settings in real time using the **Rec** button, if you continue clicking the **Go** button, or pressing [Spacebar], then ***Null Step***s will be added to the end of the sequence until **Stop** is used. In this way you can continue logging times and adding ***Null Step***s and events can be dropped into these steps later. A ***Null Step*** is automatically inserted at the end (labelled ***End*** and set to ***23:59:59.24***) - this can be deleted later or the correct time at which you wish to end the sequence can be typed in for that ***End*** step in the usual way.

If you wish to insert a ***Null Step*** between event steps when recording in real time, press [Insert] instead of either clicking on the **Go** button or pressing [Spacebar].

If, when recording timed sequences, the steps become out of sequence (time wise) then clicking on the **Shf** (Shuffle) button will shuffle the sequence steps into the correct time order.

The shuffle button

Random Sequences

A sequence set to ***Random*** is suited to applications that require ever changing scenes that don't need to run in any predetermined order. By creating different lighting scenes or chases, and dropping them into a random sequence, you can quickly produce an ever-varying lighting atmosphere. Chases in a random sequence using sound-to-light, will produce an ever-changing lightshow that follows the music.

Instead of activating steps sequentially, as in a chase, manual or timed sequence, the next step to activate in a random sequence is chosen randomly from any one of the steps in that sequence and ShowMagic never picks the same step twice in succession. Likewise, the time between random steps being activated is also chosen randomly each time.

Min and Max - these are selectable in minutes and seconds. By setting the Min time to 2 seconds and the Max time to 10 seconds, ShowMagic will pick a random time between each step being triggered that will be no less than 2 seconds and no more than 10 seconds. If you want the random sequence to randomly pick the next step but you want it do so after a regular time interval, say every 10 seconds, then simply set both Min and Max to the same value e.g. *00:10*.

Auto-Timed Random Sequences

If you set the Min time to *00:00* the Max time changes to a ***Once*** setting and the sequence **Type:** changes to ***Rnd/Sel*** meaning ***R**a**nd**omly selected and run for the duration of the **Sel**ected event. When that random sequence is triggered an event in that sequence is randomly selected which plays to the end of its duration and then the sequence stops. If you hold down [Ctrl] and right-click on ***Once*** to change it to ***Cont*** then the same thing happens but the sequence won't stop at the end of that event - instead another event is randomly picked which plays through to its end and so on until the sequence is stopped in the normal way. This feature is of course only pertinent to events with set time durations - sounds, video files, captured video with a selected To: time, timed sequences, other ***Rnd/Sel*** sequences and chases set to ***Once*** etc.

Snapshots

To create a snapshot set all the events you want to be stored in that snapshot running, then highlight an empty sequence button, hold down the [Ctrl] key and click on the **Rec** button on the sequence panel. All the running events will then be recorded to that ***Snapshot***. No timings are used in a ***Snapshot***; every event is started at the same time. If the speed and slope settings for one or more chases that are running are adjusted before the snapshot is recorded (and the **Rec** button for each chase IS NOT used) then it is those adjusted settings that are recorded within the snapshot - the original speed and slope settings for the original chases will remain unaffected. A snapshot cannot be changed into a chase, manual, timed or random sequence, it is fixed at ***Snap***. Events can later be dropped into a snapshot or deleted from it in the usual way and these events can be set to ***In*** or ***On***, but no other settings are available.

In/Out

When a snapshot has been recorded you can select either ***Normal*** or ***Chase*** for In/Out as described below:

Normal

When set to ***Normal*** the events in that snapshot will use their normal fade In and Out times if ***In*** is selected for that event step in the snapshots step details display. If ***On*** is selected for that event step then that event will come on instantly (when that snapshot is started) and go off instantly (when that snapshot is stopped) and any In and Out settings for that event are ignored.

Please Note:

The sequence sub-master fader In and Out times for that snapshot - if set to anything other than *00:00.00* - will be used when the snapshot is started and stopped. If any In and Out settings are made for event steps within that snapshot then these will be used AS WELL AS the sequence sub-master fader In and Out times. The sequence sub-master fader In and Out times have the highest priority however and it is important to know how this affects events within that snapshot - particularly when the snapshot is turned off. To help explain what happens to events in that snapshot take the following simple example.

Example:

A snapshot containing a lighting scene has its sub-master fader In and Out times both set to 1 second.

The lighting scene event in that snapshot has it's own fade In and Out times set to 2 seconds on the scene panel. That lighting scene event step is set to ***In*** in the snapshots step details display.

Now what happens when the snapshot is turned on? - The sequence sub-master fader takes 1 second to fade up to full; by this time the scene is at 50% and so it continues to fade up to it's stored levels over the remaining 1 second.

What happens when the snapshot is turned off? - The sequence sub-master fader takes 1 second to fade down to 0; the scene has faded down to 50% by this time but the sequence has finished so the scene then goes off instantly. So in effect, the scene was simply forced to fade out over 1 second (rather than 2) by the priority of the sequence sub-master fader Out time.

Chase

Setting the In/Out on a snapshot to ***Chase*** allows you to 'Blend' the channels used by a number of chases contained in that snapshot. If you are running chases recorded into snapshots and these chases use the same fixtures, the various scenes used in those chases will move smoothly between each others' positions if those chases are set to ***In*** in their snapshot. If you wish those chases to restart from their recorded start positions - to jump there rather than blending - then set them to ***On***. Experiment with these ***In*** and ***On*** settings to achieve the desired results.

Here's an example of how you can very quickly create a sequence of chases whose various channels can be set to jump or blend:

1) Create a number of chases that just contain pan and tilt position scenes for a group of fixtures. When the chases are run they simply move the fixture's mirror or head to and fro in various patterns.

2) Create a number of lighting scenes that just contain a variety of color settings for those fixtures.

3) Create a number of lighting scenes that just contain a variety of dimmer settings for those fixtures (or gobo settings if a gobo is used as its primary light function).

4) Now with these simple components we can create a varied light show very quickly and easily:

5) Run one of the pan and tilt chases, turn on one of the color scenes and turn on one of the dimmer / gobo scenes.

6) If you like the effect then select an empty sequence button, hold down the [Ctrl] key and click on the **Rec** button on the sequence panel to record those chase and scene settings as a snapshot to that sequence button.

7) Select ***Chase*** for In/Out on that snapshot.

8) Repeat steps 4, 5 and 6 above until you have enough varieties of snapshots to create your required sequence.

9) With a sequence panel on the left of the screen and a sequence panel on the right (containing your new snapshots) open an empty sequence on the left panel by right-clicking on it's button and then simply drag the snapshot buttons into the bottom of the sequence step display in the order required.

10) The sequence containing the snapshots can then be set to ***Manual***, ***Timed*** or ***Random*** and when it is run the mirror movements etc. will move smoothly between chases as one ends and the other begins because they defaulted to being event steps set to ***In*** when they were recorded in the snapshots.

When color wheel channels are faded out they will often cycle down through different colors as the chase fades out and this may not be what you require - you may wish the color to remain constant until the chase has stopped. To achieve this simply set the color scene event step in the appropriate snapshot to ***On***. Now when that chase fades out, all the channels not being used by the next chase fading in will fade out but the color will remain on until the out-going chase has finished fading out at which point it is instantly stopped.

Deleting a Sequence

To delete a sequence, highlight its button and press [Delete]. If the sequence is used in any other sequences, then a warning will be given. If you confirm the deletion then that sequence will be removed from the other sequences that contain it.

Copying a Sequence

To copy a sequence to another sequence button drag the sequence button you wish to copy onto the sequence button you wish to copy it to (select two sequence panels on the desk if necessary). An overwrite warning will be given if appropriate.

Moving a Sequence

To move a sequence from one sequence button to another, drag the button onto another empty button and hold down [Ctrl] before dropping it. If the original sequence button is used in any sequences, those sequences will be updated with the new sequence button number.

Deleting Sequence Steps

To delete a step within a sequence, click on it to highlight it in the step details display and then press [Delete]. You will then be asked to confirm or cancel.

Inserting ‘Null’ Sequence Steps

If you wish to insert a ***Null Step*** (empty step) at the end of a sequence (so that actions / times, etc can be set ready for events to be dragged in later), then highlight any blank step at the end of the sequence and press [Insert]. The ***Null Step*** will then be added after the last non-empty step and automatically labelled as ***End***.

When recording sequences in ‘real time’, ***Null Step***s will automatically be inserted at the current ‘end’ of the sequence if no ***Null Step***s already exist there - for each click of the **Go** button until the sequence is stopped.

If you wish to insert a ***Null Step*** between two steps containing events, then highlight the step that you wish to insert the ***Null Step*** in front of and press [Insert]. All the steps from the highlighted step will then be moved down one (with step numbers automatically incremented) and the ***Null Step*** will be inserted.

Changing Event Settings Within Sequences

The following settings for each event in a sequence are stored in that sequence independently from the settings on that event’s original button:

- Scene fade-in and fade-out
- Chase speed and slope
- Volume
- Volume fade-in and fade-out
- Pan position

When an event is dropped into a sequence step, a copy of the settings, set at that time for that event, is stored for that step in that sequence.

Example:
If, for example, you had a wave file with a 2 second fade-in selected for it on the sound panel, and you then dropped it into a sequence, a 2 second fade-in would be stored in the sequence for that event step. If you later changed the fade-in time for that event on the sound panel to 4 seconds and then dropped it into another sequence then a 4 second fade-in would be stored in that other sequence and so on.

Various settings for events can be changed in a sequence at any time using [Shift] with the faders on the sequence panel, but for other settings you may need to set them on the event’s panel and then drop the event into the sequence again in order to store those new settings.

Adjusting Settings for Sound Event Steps

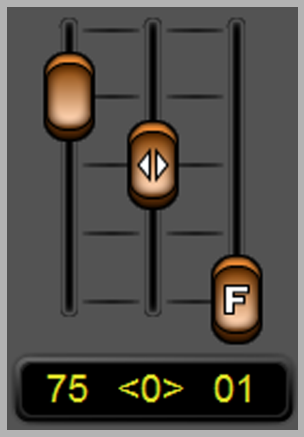
If a manual, timed or random sequence contains a sound event then the volume, pan and fade in / out settings can be adjusted in the following way:

1) Highlight the sound event in the sequence step details display.

2) Hold down the [Shift] key and the three faders on the top right of the sequence panel will change into orange colored volume, pan and fade-time faders:

3) With the [Shift] key still held down, adjust these faders to the desired settings.

4) Release the [Shift] key and the normal sequence faders will again be shown.



Sound event step faders

Volume - This is adjustable between 0 and 100% (***FL***) as normal.

Pan - This fader is adjustable between:

Topmost position = full pan left - shown as ***<FL***

Bottom position = full pan right - shown as ***>FL***

Any settings in-between are in 2% increments from ***>98*** through ***<0>*** (centred) to ***<98***.

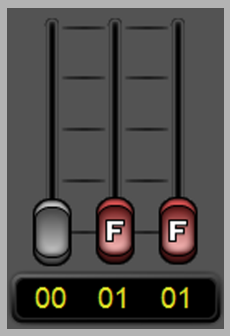
Fade Time - This is adjustable between 0 and 99 seconds. If you click / right-click on the value below this fader the time can be decremented/incremented in half-second steps. A half second is shown as a point e.g. '***7.***' equals 7.5 seconds. If the sound event step in that sequence is set to ***In*** then this fader sets the fade-in time for that event step. If it is set to ***Out*** then this fader sets the fade-out time. The fade-in and fade-out settings set on the sound panel at the time the event is dropped into the sequence are stored in the sequence until one of them is changed using the Fade Time fader as above.

Please Note:

You can make any adjustments described above whilst that event step is playing. The above settings will only affect that sound event *in that particular sequence*. The original volume, pan, fade ***In*** and fade ***Out*** settings for that sound event on its own sound event button on the Sound panel remain unaffected.

Adjusting Settings for Lighting Scene Event Steps

If a sequence contains a lighting scene then the fade-in and fade-out settings for that scene within that sequence can be adjusted in the following way:



Lighting scene step faders

1) Highlight the lighting ***scene*** event in the sequence step details display.

2) Whilst the [Shift] key is held down the 2nd and 3rd faders on the top right of the sequence panel will change into red Speed faders:

3) With the [Shift] key still held down, adjust the 2nd fader for the scenes fade-in time and the 3rd fader for the scenes fade-out time. The decimal point denotes half a second, so values of *1.* or *2.* etc. denote 1.5 seconds, 2.5 seconds etc.

4) Release the [Shift] key and the normal sequence faders will again be shown.

The fade-in and fade-out values can be adjusted as above between the range of 0 seconds (***00***) and 99.5 seconds (***99.***). If you wish to use longer fade times than this then do step 3 above but this time push the faders to the topmost setting to display ***FT*** (***F***ade ***T***ime). The scene will then fade in/out over the times set for it on the scene panel that can be up to 1 day - *23:59:59.24.*

Please Note:

The ***FT*** option uses the In: and Out: settings shown in the scene's details display on the scene panel. If you alter these In: and Out: settings on the scene panel then the sequence will use those altered settings. You cannot use the same scene elsewhere with different fade times in excess of 99.5 seconds because all sequence steps containing that scene event will use the CURRENT In: and Out: settings shown in the scene's details display. Instead, you should copy that scene button onto another empty scene button and use that new scene in other sequences etc. with different In: and Out: settings.

'Live Editing' of Scenes in a Manual Sequence

When you are running a lighting scene from a ***Manual*** sequence, you can use the keyboard commands described in "Setting Faders using Commands", p.39, to adjust lighting fixtures and then re-record them to a running scene.

Example:

Let us say that you have recorded 8 par cans (assigned to fixture faders 1 to 8) at 50% stored on scene ***A001***, and you have dropped that scene into step ***001*** of a ***Manual*** sequence. If you want to adjust those values to 60% then you can do this as the sequence is running in the following way:

1) With the sequence panel on the left of the desk, highlight and run the ***Manual*** sequence - this will then run lighting scene ***A001***.

2) Using the numeric keypad on the keyboard, type [1] [/] [8] [*] [6] [0] [Enter] to set fixtures 1 thru 8 to 60%.

3) Now you can re-record that scene using one of the following two methods:

   Press the function key labelled [F11] on the PC keyboard (often labelled as 'Save' on Microsoft keyboards) - this will immediately re-record that scene without prompting for confirmation.

   Or:

   Click on the **Rec** button on the sequence panel. You will then be prompted to confirm the overwriting (re-recording) of that scene.

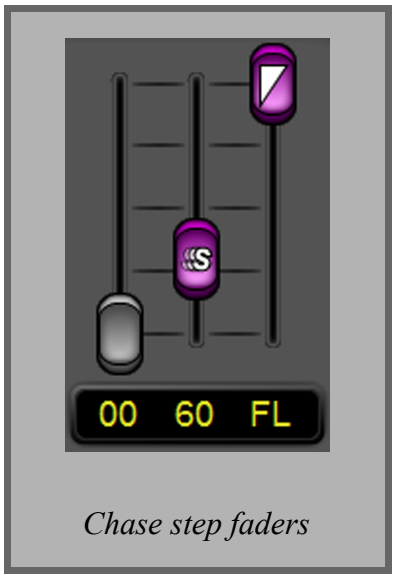
Notes on Live Editing

- All of the commands described in "Setting Faders using Commands", p.39, can be used for adjusting fixtures.
- When a scene is 'Live Edited', the scene is not stopped and the desk is not cleared, irrespective of the setting of the clear button on the lighting scene panel.
- The scene that is re-recorded is always the last scene run by the sequence (shown highlighted in the sequence panel's live display).
- If the **Overwrite > Recorded Channels Only** option is ticked on the lighting scene **Rec** button, then only the values for any channels originally stored in the last scene to be run from the sequence are re-recorded to that scene. All other channels are not recorded to that scene.
- Unless the **Overwrite > Recorded Channels Only** option is ticked as described above, if more than one scene is being run by the sequence or if other fixtures have been adjusted either manually or 'cued' by a lighting scene run outside the sequence, the channels that are recorded into the last scene are determined by the current mode setting of the record button as normal.

Adjusting Settings for Chase Event Steps

If a sequence contains a lighting chase then the Speed and Slope settings for that chase within that sequence can be adjusted in the following way:

1) Highlight the chase event in the sequence step details display.
2) Whilst the [Shift] key is held down the 2nd and 3rd faders on the top right of the sequence panel will change into purple Speed and Slope faders:
3) With the [Shift] key still held down, adjust these faders to the desired settings.



Chase step faders

4) Release the [Shift] key and the normal sequence faders will again be shown.

You can also make any adjustments described above for that chase step whilst it is running and the original settings for that chase's button on the sequence panel remain unaffected, i.e. a single chase on the sequence panel can be used in any number of other sequences each with their own independent Speed and Slope settings.

Creating a Sound Event Volume or Pan Change Step

If you had a sound event in a sequence (background music for instance) and you wished to change just the volume setting for that music later in that sequence you can do so in the following way:

1) Let us assume that you have a timed sequence, such as the one supplied on the demonstration desk, in which step 001 brings ***In*** a midi file event and steps 2 to 5 are scene event steps.

2) Insert a ***Null Step*** in front of step 004 by highlighting step 004 and then pressing [Insert]. Hold down [Ctrl] and double-click on the time digits to set them to be the same as the previous event.

3) Drag the sound event button containing the same midi file event from the sound panel onto the ***Null Step*** BUT hold down the [Ctrl] key before you drop it. Step 004 is now a volume change event - ***VL*** will be shown to the right of the sound event name, and the value of the volume level for that sound event, as was set on the sound panel, will also be seen to the right of ***VL***.

In a similar way to adjusting settings for sound event steps you can also set the volume and fade time by highlighting that step, holding down [Shift] and adjusting the first and third faders.

Volume fader - The setting of this determines the volume that the sound event will play at after the volume change event step has been activated and the fading has finished.

Fade Time fader - This determines the time that it will take to fade up or down from the current volume level to the level set for the volume change event. This is adjustable between 0 seconds and 99 seconds. If you click/right-click on the value below this fader the time can be decremented/incremented in half-second steps. A half second is shown as a point e.g. '***7.***' equals 7.5 seconds.

If you wished to change the pan setting, rather than the volume setting, for that sound event in the sequence you can do so in the following way:

1) Drag the sound event button containing the same midi file event from the sound panel onto a ***Null Step*** BUT hold down the [Ctrl] key before you drop it. Step 004 is now a volume change event.

2) Hold down [Ctrl] and right-click on ***VL*** to change it to ***PN***. This changes the step from a volume change event to a pan change event.

3) Hold down [Shift] and use the centre and right faders to adjust the pan position and pan fade times in a similar way to setting the volume change event described above. The pan setting will then be shown to the right of ***PN***.

Holding down [Ctrl] and left-clicking on a step set to ***PN*** will change it back to ***VL***.

To remove a volume or pan change step simply highlight the step, press the [Delete] key and confirm.

Auto-Playlist Function

If you are creating a sequence which contains events of different time durations that need to simply run one after the other (often referred to as a 'play list') the features in this section can be used to automatically calculate the step trigger times in a timed sequence so that you don't have to work them out manually. The auto-playlist function can be used with timed sequences containing any types of events that have set time durations, e.g. sound events, timed sequences etc. and the trigger times are automatically calculated for you. You can also use events that don't have fixed time durations with this function but of course ShowMagic can't calculate the times for you. Here's an example:

1) Using the Demo desk, open up an empty sequence button by right-clicking on it, or by highlighting it and clicking the **Edit** button.

2) Drag and drop the *Midi Funk* and *Till FX* sound events from the sound panel into steps 001 and 002 respectively.

3) Drag and drop the *Spot Chase* and *Timed Sequence* events from the sequence panel into steps 003 and 004 respectively.

4) Highlight any blank sequence step at the bottom of the step details display and press [Insert] to insert a ***Null Step*** at the end. This last ***Null Step*** will automatically be re-labelled as ***End***.

5) Hold down [Ctrl] and click on the **Shf** button and an Auto Playlist Timer dialogue box will appear.

6) Click on the **Do** button - the dialogue box will be removed and trigger times will automatically be calculated and set in accordance with the time durations of each of the events so that one follows the other. Edit the label for this sequence as *Playlist.*

Because the first step, *Midi Funk,* has a duration of 01:03.00 the second step, *Till FX*, will have it's trigger time set to *01:03.00.* Likewise, *Till FX* has a duration of 00:01.08 so this is added to make the trigger time for the third step *01:04.08* and so on for all the steps.

You will notice that the trigger time calculated for step 004 *Timed Sequence* is the same as step 003 *Spot Chase*, this is because the *Spot Chase* event does not have a fixed duration and therefore a trigger time cannot be calculated for the next step - the same goes for other events with no fixed duration such as lighting scenes, control events (excluding video) or manual sequences. As

well as using the Auto-playlist function, trigger times can be edited manually in the usual way; the function is provided, however, to make the setting of consecutive trigger times in a typical 'playlist' that much easier.

Auto-Time Function

If you had consecutively timed steps in a timed sequence (such as the example ***Playlist*** sequence described above) but you wished to set a delay of 4 seconds between the ***Midi Funk*** event finishing and the ***Till FX*** event starting, the timings for all the events following the ***Midi Funk*** event would have to be incremented. Rather than having to do this manually, step by step, an 'Auto-Time' function has been included to simplify this process. This function uses start and end markers to mark the range of consecutive steps that are affected by the function. Here's an example of how to use this function:

1) Using the above ***Playlist*** sequence, double-click on the white step number of the step that you wish to mark as the end of the 'marked' section.

2) Scroll up and highlight the ***Till FX*** step in the step details display, it will then be highlighted in red - when using the Auto-Time function the currently highlighted step in a sequence is treated as the 'start' marker.

    a) All the events between the start marker (highlighted step in red) and the end marker inclusive are then shown highlighted in blue.

    b) If you wish to set the end marker as the last non-empty step in the sequence (as is required in this case) then simply double-clicking on the white step number of the start marker step (highlighted in red) will set the end marker as the last non-empty step in the sequence (step 005).

3) Hold down both the [Ctrl] and [Shift] keys and then right-click four times on the seconds digits for the ***Till FX*** events' trigger time and you will notice that the trigger times for all the steps in the marked section below that 'start' step are also incremented by 4 seconds.

Similarly, clicking or right-clicking on any of the Hours, Minutes, Seconds or Frames digits for an event's trigger time will decrement / increment those digits on all events highlighted in blue below that step.

When a marked section is active you can move an end marker to a step earlier or later in the sequence by simply double-clicking on the desired step's white number.

When the desired times have been set, the markers can then be removed in any of the following ways:

a) Double-click again on the white step number for the 'end' step (the last step highlighted in blue).

b) Double-click on the white step number for the 'start' step (the step highlighted in red).

c) Click on any blank step below the last step in the sequence.

d) Click on the **Edit** button to remove the step details display.

Continue From Mark

When you use the bottom half of the **Go** button - Play From Mark - a manual or timed sequence can be started from the step currently highlighted in the step details display rather than starting from step 001. Sometimes in a live performance however you may need to skip sections of a pre-programmed show or go back a few steps whilst the sequence is already running - the 'Continue From Mark' feature has been included to accommodate this.

At any time when a manual sequence is running rather than clicking **Go** (or [Spacebar]) to trigger the next step in the manual sequence (as shown in the live display), you can click on any step in the step details display to highlight it and then click on the bottom (Play From Mark) half of the **Go** button - ShowMagic will then jump to that step in the sequence, it will be triggered and ShowMagic will then await a **Go** (or [Spacebar]) to trigger the next step after that as normal.

Similarly, at any time when a timed sequence is running, highlighting a step in the step details display and then clicking on the bottom (Play From Mark) half of the **Go** button will restart the timed sequence from that point (time) in the sequence.

Notes on using 'Play From Mark' and 'Continue From Mark'

There are fundamental differences in the logic involved when using the bottom half of the **Go** button as a 'Play From Mark' or 'Continue From Mark' button in a timed sequence and using it in a manual sequence. It is important that you understand the difference so that you can set the exclusivity settings for steps in manual sequences correctly to achieve the right results, as will now be explained with some examples:

If you use the 'Play From Mark' feature with timed sequences, ShowMagic can automatically calculate what events in that timed sequence should be running at the trigger time set for the step it was started from, and what events would have finished by that time. Example - a timed sequence contains the following:

Step 001 - trigger time *00:00:00.00* - group ***XT*** - a sound effect lasting 6 seconds.

Step 002 - trigger time *00:00:00.00* - group ***XT*** - first lighting scene.

Step 003 - trigger time *00:01:00.00* - group ***XT*** - second lighting scene.

Step 004 - trigger time *00:02:00.00* - group ***XT*** - a sound event of music lasting 2 minutes.

Step 005 - trigger time *00:04:00.00* - group ***XT*** - a ***Null Step*** as the last step to stop the sequence.

If you were to highlight step 003 and then click on the 'Play From Mark' button the sequence would be started 1 minute in (trigger time of *00:01:00.00*) and the following would happen:

a) The lighting scene in step 003 would be run and because it is set to ***XT*** the previous scene in step 002 is automatically turned off.

b) ShowMagic would not play the sound effect in step 001 however because we have started the sequence 1 minute in, step 001 would normally have been triggered at the very start of the sequence (*00:00:00.00*) and because it only has a duration of 6 seconds it would have finished by this point in the sequence - ShowMagic can automatically calculate this and therefore won't play it.

The logic for manual sequences is different, in that ShowMagic does not have any time references to use in determining which events should be running, and which events shouldn't, if you start or continue from a particular step in that sequence. Because steps are triggered manually (with the exception of any steps set to ***Wait*** or ***FIlw***) it is not possible to know when the next steps were triggered after a step containing an event with a set time duration e.g. a piece of music.

Consider the example above, but this time as a manual sequence thus:

Step 001 - trigger = ***Go*** - ***XT*** - a sound effect lasting 6 seconds.

Step 002 - trigger = ***Wait*** *00.00* - ***XT*** - first lighting scene which auto starts with the sound effect.

Step 003 - trigger = ***Go*** - ***XT*** - second lighting scene.

Step 004 - trigger = ***Go*** - ***XT*** - a sound event of music lasting 2 minutes.

Step 005 - trigger = ***Go*** - ***XT*** - a ***Null Step*** as the last step to stop the sequence.

If you were to highlight step 003 and then click on the 'Play From Mark' button the sequence would be started from step 003 and the following would happen:

a) The lighting scene in step 003 would be run and because it is set to ***XT*** the previous scene in step 002 is automatically turned off.

b) ShowMagic would however now play the sound effect in step 001 because it has no way of knowing how soon after the sound effect is supposed to play that you are triggering this step!

Let us assume that you want to run the manual sequence at roughly the same timings as the timed sequence:

1) The sequence is started with **Go**, and the sound effect (step 001) and the first lighting scene (step 002) come on together.

2) Approximately 1 minute later (the sound effect has long finished by this time) **Go** is used to trigger the second lighting scene (step 003) that turns off the previous scene (step 002) because of its ***XT*** setting.

3) Approximately 1 minute after that, **Go** is used to start the music that plays for 2 minutes.

4) After the music is finished **Go** is used to stop the sequence.

Now let's say you are at rehearsals for the show and you want to rehearse the section of the show starting from the point of the second lighting scene. You highlight step 003 click on the 'Play From Mark' button to start the show from that point and the second lighting scene (step 003) comes on which is what you want, BUT the sound effect (step 001) also plays which you don't want! This is not a problem; there are solutions with appropriate use of the exclusive group settings:

a) Set the exclusivity group for the second lighting scene (step 003) to ***EX*** (***EX***clusive) - when that step is triggered using 'Play From Mark' only that lighting scene is run as its ***EX*** setting will turn off any other events that may otherwise have been run. This will stop the earlier sound effect (step 001) from playing and any earlier scene events from running.

b) If solution a) above is not appropriate in a sequence because you may want to leave other earlier events (such as video events, chases etc.) still running, but not play the sound effect or any previous scenes, then you could do the following:

   1) Set the exclusivity group of step 001 to ***La*** (here we are using main group letter ***L*** to represent lighting scene events and sub-group letter ***a*** to represent audio events).

   2) Set any earlier scene events to ***LI***.

   3) Set any other type of earlier event steps (that you don't want to be turned off by a scene event) to say, '***V***' for video events, '***C***' for chase sequences etc.

   4) Set the later scene event (that you want to turn off earlier sound events and lighting scenes) to '***L***'.

For example we now have the following:

Step 001 - trigger = ***Go*** - ***La*** - a sound effect lasting 6 seconds.

Step 002 - trigger = ***Wait 00.00*** - ***LI*** - first lighting scene which auto starts with the sound effect.

Step 003 - trigger = ***Go*** - '***C***' - a chase sequence

Step 004 - trigger = ***Go*** - '***L***' - second lighting scene.

Step 005 - trigger = ***Go*** - ***XT*** - a sound event of music lasting 2 minutes.

Step 006 - trigger = ***Go*** - ***XT*** - a ***Null Step*** as the last step to stop the sequence.

When you now 'Play From Mark' or 'Continue From Mark' from step 004 above the following will happen:

- The sound effect in step 001 is not played - the '***L***' setting of step 004 turns off any other steps set to main group '***L***' or any of the ***L*** sub-groups i.e. ***La*** to ***Lz***.

- Step 002, the first lighting scene (which would normally come on with step 001), will not be run because the '***L***' setting of step 004 turns it off due to it's sub-group setting of ***LI***.

- Step 003 will be run because it is set to a different main group letter - '***C***'.

If the same sequence is run from the start using ***Go*** as normal, the following happens:

- The sound effect in step 001 (set to ***La***) is played.

- The first lighting scene in step 002 immediately follows it (***Wait 00.00***) and because it is set to a different sub-group of ***L***, i.e. ***Ll***, it does not turn off step 001 that is set to sub-group ***La***. ShowMagic then waits for the next ***Go*** to trigger the next step - step 003.

- When step 003 is triggered the lighting chase is run and because it is set to main group letter '***C***' it does not affect any of the previous steps. ShowMagic then waits for the next ***Go*** to trigger step 004.

- When step 004 is triggered the lighting scene set to main group '***L***' turns off any earlier steps set to main group '***L***' or any of its sub groups ***La*** to ***Lz***. Therefore step 001 is turned off (set to ***Ll***), step 002 is turned off (set to ***La***) but step 003 is unaffected because it belongs to a different main group -'***C***'.

It is also important to remember that an event step set to ***XT*** will ALWAYS turn off any earlier events of its own type irrespective of their main group or sub-group settings. Example:

Step 001 contains a lighting scene set to ***La***

Step 002 contains a lighting scene set to ***Lb***

Step 003 contains a lighting scene set to ***'X'***

Step 004 contains a lighting scene set to ***XT***

Step 002 does not affect step 001 - different sub-group.

Step 003 does not affect step 001 or step 002 - different main group.

Step 004 turns off steps 001, 002 and 003 - set to ***XT*** (e***X***clusive ***T***ype) which turns off all other events of its type i.e. lighting scene events shown in red. Though this may at first seem complicated, the principal is actually very simple and it provides a very quick, powerful and versatile system for the logical control of events.

Text Only Event Steps

If you wish to mark certain sections of a sequence with labels for reference purposes, you can change a ***Null Step*** into a ***Step Text*** event that you can then label. Simply insert a ***Null Step***, hold down [Ctrl] and then double-click on the step. A dialogue box will then appear. Enter the label and click on the **Enter** button.

Step Text events have no effect in a sequence; they are there for information purposes only. Double-clicking on a ***Step Text*** event will change it back into a ***Null Step***.

Part-Step Numbering

It is common in theatre applications to use a written cue sheet. When a show is being designed the lighting scenes, sound effects etc. are each given a cue number denoting their running order in the show and the step numbers in a ShowMagic sequence (001, 002 etc.) could be used to represent these cue numbers.

However, during rehearsals the director of a show may decide to insert some extra cues in the show and the usual method used for this is to give these new cues a part-step number. For instance if a new scene or sound effect is inserted between the original cue numbers (steps) *019* & *020* this is given a part-step number of *19.05*, if another new scene were to be inserted between *19* & *19.05* it would be given a part-step number of *19.03* and so on. This method avoids the need to re-number all the cue numbers on the original cue sheet.

ShowMagic includes a feature to accommodate this popular cue numbering system - if you highlight a sequence step, hold down [Ctrl] and press [Insert] a ***Null Step*** is inserted at that point but its step number is shown as a part-step of .01. You can then set that part-step number by holding down [Ctrl] and left or right-clicking on it to decrement or increment that number respectively between .01 and .99.

Loading and Saving Sequences

Sequences can be saved to disk and loaded from disk independently of the desk file. You may wish to use different desks at different times but use the same sequence in a number of these different desks. The **Load** and **Save** sequence buttons have been provided for this purpose - however - it is very important that you read the notes below if you are going to use these functions.

To save a sequence:

1) Highlight the sequence button you want to save.

2) Double-click on the red **Save** button on the sequence panel a Save Sequence dialogue box will appear with the files in the default directory shown.

3) The name of the sequence is used as a default filename but you can of course edit this in the normal way.

4) Click on the **Save** button to save that file.

To load a sequence:

1) Highlight a sequence button that you want to load a sequence onto.

2) Double-click on the red **Load** button on the sequence panel - if the sequence button is not empty you will be prompted to confirm the overwriting of that sequence.

3) Use the Load Sequence dialogue box to select the sequence you want to load.

4) Click on the **Open** button to load the sequence.

Notes on Loading and Saving Sequences - Please Read Very Carefully!

When an event button is dropped into a sequence, ShowMagic stores a pointer to that event button in the sequence - not the event itself. When you run the sequence it will run whatever is loaded onto that event button at the time. Therefore, if you want to use the same sequence in two different desks it is crucial that any events contained in that sequence are stored on exactly the same event buttons and are exactly the same events on both desks - otherwise you will get some very unexpected results!

Example 1:

In desk 'A' we create four lighting scenes for par cans on scene buttons *D010*, *D011*, *D012* & *D013*.

We then create a lighting chase sequence that runs scene buttons *D010*, *D011*, *D012* & *D013*.

We then save that chase sequence as a sequence file.

We load up a different desk - desk 'B' - and load the chase sequence onto a sequence button on that desk.

We then run that chase sequence but instead of a par can chase we get scanners going crazy because scene buttons D010 to D013 on desk 'B' contain FX movement scenes for the scanners and the chase sequence is chasing through those FX scenes instead of par can scenes!

Similarly, if you created a lighting scene on scene button *C008*, that turned on blue par cans for instance, and then dragged that button into a sequence, when you run that sequence it will run scene button *C008* which in turn will turn on blue par cans. However, if you later re-recorded over scene button *C008* with a setting that turned on red par cans, when you run the sequence it will run scene button *C008* that turns on red par cans.

Example 2:

If you were to create a sound event on sound event button *A001* (such as loading a wave file called 'Song1.wav' into it) and then drop this into a sequence, when you run that sequence it will play the Song1.wav file. If you later loaded a different wav file onto sound event button *A001* such as 'Song8.wav', when you run the sequence it will play Song8.wav not Song1.wav.

Another Very Important Point to Note - Events Within Events

It is not just the events stored in a sequence that you need to be aware of when using the same sequence in different desks; it is also any events contained within the events stored in the sequence!

Section 10 - Device Control Panel

The panel contains control event buttons to which these events can be assigned. Bank selector buttons labelled *A, B* etc with page selector buttons for each bank provides access to the available control events. A details display and port select buttons are provided. A sub-master fader with mute button, timer display and motor control buttons are also included.

Using MIDI-Controllable Devices

A typical MIDI device that you could control with ShowMagic would be a MIDI-controllable audio effects unit. For instance, if you were a live performer using ShowMagic to play wave files as your backing / click tracks, with your lighting synchronized to each track via timed sequences for each song, you could use MIDI control events to turn on / off certain effects such as echo or reverb on an audio effects unit. In this way the singers' microphone could be fed into the effects unit and by dropping appropriate MIDI control events into the timed sequence, echo or reverb etc. could be applied to the vocals automatically at exactly the right moment in the song. A MIDI cable must first be connected between the MIDI port on your PC and the MIDI-controllable effects unit before using the device control panel to communicate with the device.

To create a MIDI control event do the following:

1) Click on a control event button to highlight it.

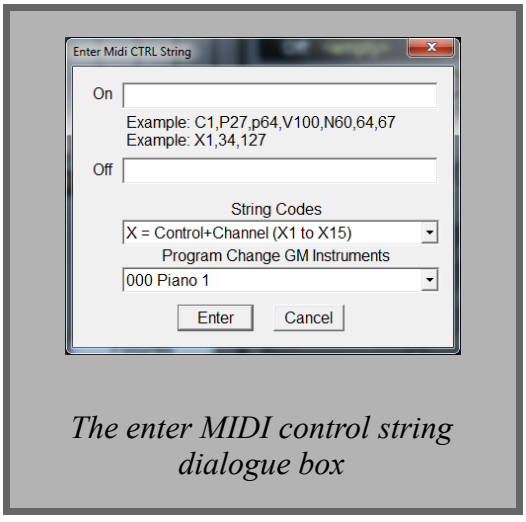
2) Double-click on the port select button containing the icon depicting a MIDI socket. This selects output from the MIDI port for that control event button and the details will then be shown in the details display.

3) If you have more than one MIDI port on your ShowMagic PC then hold down [Ctrl] and then left / right-click to the right of Port: to select the port you wish to use for that control event.

4) Double-click to the right of On: and an Enter Midi CTRL string dialogue will appear.

5) Type in the appropriate code in the On box for the MIDI command that you wish to send. A list of valid codes to type in can be viewed in the String Codes drop down menu.

   Please Note:
   These codes are upper and lower case sensitive, a lower case 'p' has a completely different function from the upper case 'P' - both being used to send different MIDI commands.



The enter MIDI control string dialogue box

Example:
Let us assume that the effects unit uses 'Program Change' MIDI commands to select settings, e.g. the receipt of a 'Program Change 1' MIDI command selects setting 1 on the unit - which is, for example, no effect, and 'Program Change 2' selects setting 2 which is, for example, an echo effect.

To send these commands simply type *P1* (the ShowMagic 'String Code' for the 'Program Change 1' MIDI command) in the On box and click on the **Enter** button for one control event, then type *P2* in the On box for another control event and click on the **Enter** button. Now, if either of these buttons are run by double-clicking on them, dropping them into a sequence and running that sequence, or dropping them onto action buttons which then get triggered in any of various ways, the desired effect on the audio effects unit will selected.

A list of the established 'General MIDI Instrument' names can also be viewed in the Program Change GM Instrument drop down menu. These drop down menus are there for reference only, they do not perform any other function.

Numerous string codes can be typed into the On box on the Enter Midi CTRL string dialogue for each control event button and running that control event will output all of the MIDI commands for those codes, but the rule is that each code must be a legal code (as listed in the String Codes drop down menu) and each code must be separated by either a space or a comma.

If the device is set to receive MIDI commands on any MIDI channel other than channel 1, e.g. channel 4, then the channel select code *C4* must precede any other commands in the On box e.g. *C4,P1* etc. If no channel select code is entered it is sent on MIDI channel 1- the default. You will need to refer to the manual supplied with your MIDI-controllable device for the appropriate commands, but most devices use a 'Program Change' MIDI command with a number for selecting stored settings on the unit.

If you only enter a MIDI command in the On box then when that MIDI control event is run the LED on it's button will turn on momentarily to show that the command has been sent and then the button (and therefore the control event) will be turned off automatically.

If however you want to select an effect setting (e.g. echo) when the control event is turned on but you want the event to remain on and send a different MIDI command for another effect setting (e.g. no effect) when it is turned off, then simply type in the appropriate codes in the On and Off boxes.

Example:

Let us assume that the effects unit you are using requires a 'Program Change 1' MIDI command to select setting 1 which is 'no effect', and the 'Program Change 2' MIDI command selects setting 2 which is an 'echo' effect. By typing in the commands *P2* in the On box, and *P1* in the Off box for that control event, running the event will select 'echo' on the device and turning off the event will select 'no effect'.

To send a Control Change MIDI command, type *Xn* (where ***n*** is the channel number) followed by two decimal numbers separated by commas - the first number being the number of the control command and the second being the value that goes with it e.g. *X1, 34, 127*

Most of the standard MIDI commands are supported with ShowMagic control codes as shown in the String Codes drop down menu:

X Control Change (*X1* to *X15*)

C MIDI Channel (*C1* to *C16*)

P Program Change (*P0* to *P127*)

p Pan Control (*p0* to *p127*)

N MIDI Note On (*N0* to *N127*). This must be **preceded** by a velocity value (*V0* to *V127*)

n MIDI Note Off (*n0* to *n127*)

V MIDI Velocity (*V0* to *V127*)

v Main Volume (*v0* to *v127*)

A All Notes Off (*A*)

R Reset All Controllers (*R*)

Please Note:
Commands are case sensitive.

Example:
Let's assume that the effects unit is set to receive MIDI commands on MIDI channel 8, the effects preset number 1 is 'no effect', the effects preset number 2 is 'echo' which are both selectable using the MIDI 'program change' command and that the level of the echo effect is selectable from 0 to 100% by setting the velocity of note 0 to the required level (0-127).

The following ShowMagic String Codes in the On box of the Enter Midi CTRL string dialogue would turn on the echo setting and set it at a level of 50% when the control event is turned on;
C8,P2,V63,N0

The following ShowMagic String Codes in the Off box of the Enter Midi CTRL string dialogue would select the 'no effect' setting when the control event is turned off; *C8,P1* Any control event can be copied to another control event button in the normal way by dragging one button onto another. The new control event can then be edited and renamed etc.

Deleting a Control Event

To delete a control event, highlight its button and press [Delete]. If the event is used in any sequences, then a warning will be given. If you confirm the deletion then that event will be removed from any sequences that contain it.

Copying a Control Event

To copy a control event to another button drag the button you wish to copy onto the button you wish to copy it to (select two panels on the desk if necessary). An overwrite warning will be given if appropriate.

Moving a Control Event

To move a control event from one button to another, drag the button onto another empty button and hold down [Ctrl] before dropping it. If the original control event button is used in any sequences, those sequences will be updated with the new control event button number.

Section 11 - Monitor Panel

The monitor panel

This panel is used for monitoring what is currently running in ShowMagic and what input and output signals are coming into, and going out of it. Buttons are available on the bottom for selecting the different monitor displays:

- DMX output (**Dmx**)
- MIDI input (**Midi**)
- Running events (**Run**)

DMX

This display shows a list of fixture fader numbers (under Fdr) and their labels, plus the DMX universe number (in brackets) and start address (under Addr) for the first fixture assigned to that fixture fader. The DMX output values for each channel of that fixture are shown (under the appropriate channel offset number C01, C02 etc.) with a short title (e.g. *Pan*, *Tlt* etc.) to indicate the function.

If the **Options > Monitor Panel > Display DMX Percentage** item is ticked then the DMX values will be shown as a percentage (***0 - FL***) rather than a DMX value (***0 - 255***).

Up to 8 channels can be viewed at any one time, but if the fixture possesses more, then these can be viewed by clicking on the previous and next buttons on the bottom left of the panel.

To view the next or previous page of fixture faders, right-click or left-click respectively on the page up / down buttons.

If you click on the **Dmx** button again the display will toggle to show the DMX input values arranged by simple DMX channels in rows of 8, i.e. The values are shown as raw channels rather than by fixture functions.

MIDI

If you click on this button the MIDI-in port, channel number, status (e.g. ***Note On***) and values for the data bytes ***B1*** & ***B2*** for any MIDI inputs can be viewed. If the **Options > Monitor Panel > Display Midi Note** item is ticked then the first byte (B1) will be displayed as a note and octave number rather than a value. Up to 29 inputs can be viewed down the display, and as more are received, the topmost input details are scrolled (lost) off the top. The last MIDI input received is shown in yellow.

Double-clicking on the **Clear** button will clear this display.

Run

Clicking on this button selects a display showing a list of any events that are running. Up to 29 events can be listed in this display.

Quick-Find Feature

If you wish to go to any of the running events shown in the **Run** display then double-clicking on it within that display will select its panel on the other side of the desk with its button highlighted. You can then access its button or use the motor control buttons on its panel to pause the event, stop it etc.

Section 12 - Action Panel

The action panel

The purpose of the action panel is to provide one panel that can contain a mixture of ShowMagic events - any types of event can then be mixed together and controlled from that single panel. Events that are to be controlled by external devices (e.g MIDI, remote media controller etc) need to be assigned to action buttons because there are playback and logic control features available that are specific to action buttons only.

The panel contains pages of 24 action buttons, to which any lighting scenes, sounds, lighting chases or other events can be assigned. Page selector buttons provide access to the other pages of action buttons.

If the ***Main/User Screen Button*** item on the **User Screen Access Menu** (see "User Screen Access Menu", p.158), is ticked then a button marked **US** (**U**ser **S**creen) can be used to go to the user screen as an alternative to using the ***Options > User Screen*** menu item.

A button marked **DT** (**D**isable **T**riggering) can be used to disable the external triggering of action buttons (see "Triggering Action Buttons", p.145) and it is an alternative to un-ticking the ***Options > Action Panel > Enable Action Triggers*** menu item. When this option is off (button shown in grey) any action buttons set to trigger by external devices will have a '**T**' displayed in their LED graphic.

A button marked **RD** (**R**un **D**efaults) can be used to turn on the 'Run Default Action Buttons' function described in "Operation Options", p.143.

Action Buttons

When an event is assigned to an action button (see "Assigning Events to Action Buttons", p.140), the button changes to the appropriate event color for easy recognition, e.g. if a lighting scene event were dragged onto an action button, that button would be changed to red to indicate a lighting scene event. The label for that event is also displayed on the action button.

Please Note:
Labels on action buttons cannot be edited - the label shown is the same as the label used for the event that has been assigned to that action button.

Action Button LEDs

An LED is provided on each button and when a button has been run from the action panel (or the event assigned to that button has been run from its own panel) this LED will turn half-bright or bright green to indicate that it has been activated.

As with the scene buttons, a half-bright green LED on a red action button indicates that a scene is in the process of coming on (or going off), a half-bright LED on an orange action button would indicate that the sound event volume is fading up or fading down and so on. If the event has been paused, the LED will flash on and off to indicate this. Similarly, with the red LED feature, if a scene is assigned to an action button, and a sequence containing that scene is also assigned to another action button, the LED on the action button for the sequence will turn green when it is run, and when the scene is run (as a step in that sequence) the LED on its action button will turn red to indicate that it has been run indirectly by another event.

Assigning Events to Action Buttons

To assign a ShowMagic event (scene, sound event etc.) to an action button simply:

1) Select the appropriate panel on one side of the desk for the type of event you wish to assign to the button.

2) Select the action panel on the other side of the desk.

3) Drag and drop the scene, sound event, control event or sequence button onto the desired action button. That action button now has that event assigned to it. Dropping the event elsewhere, such as back in its own list display, will cancel the operation.

Clicking on an action button highlights it and its details are shown in the top details display. Double-clicking on an action button runs the event assigned to it and any Wait, fade In settings etc. will be used. Double-clicking on an action button that is already running turns it off and any Hold, fade Out settings etc. will be used. Alternatively, the panel's motor control buttons can be used as described on the next page.

Deleting Action Button Assignments

To delete an assignment on an action button and make it 'empty', simply highlight the action button and press [Delete]. You will then be asked to confirm or cancel the operation.

Action Motor Control Buttons

Go - Clicking on this button, or pressing [Spacebar] if the action panel is on the left, will run the event assigned to the currently highlighted action button. If you had 2 action panels selected on the desk, the left panel is the one that [Spacebar] will affect.

Any Wait, fade In or volume fade-up settings will be used when the event is run with this button. If the event is a ***Manual*** sequence, clicking on the **Go** button, or pressing [Spacebar] when the sequence is already running will start the next event in that sequence if its event 'Trigger' is set to ***Go***.

Stop - This will stop any event assigned to the highlighted action button, but unlike double-clicking on the action button when it is running, the event stops immediately, ignoring any Hold, fade Out or volume fade-down settings set for that event.

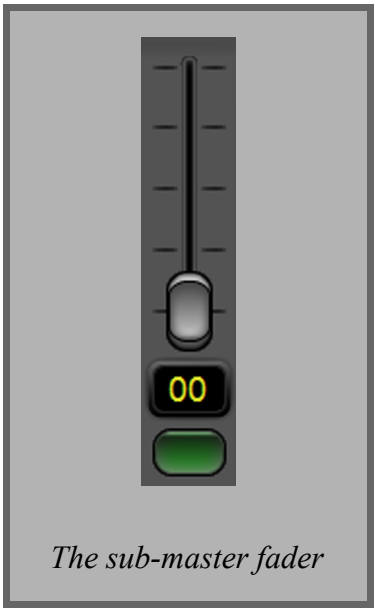
Pause - This will pause the event and the button is illuminated. Clicking on **Go**, or [Spacebar] takes pause off.

Rew - This is used only for sequences on action buttons. If a sequence is running it will move back to the previous step in the sequence.

Fwd - This is also used only for sequences. If a ***Timed*** sequence, it will move forward to the next step. It has no affect on a ***Manual*** sequence. **Go** must be used instead to move to the next step.

Action Panel Sub-Master Fader

The fader on the action panel serves a number of purposes depending on what type of event has been assigned to the highlighted action button. If it is a sound event, it acts as a volume control (shown in orange), otherwise it acts as a sub-master fader for the scene, ***Chase*** or sequence. If the sequence includes sound events, the overall volume(s) of the sound event(s) are also adjusted by this fader, assuming that ***Snd*** has been highlighted in that sequence's details display.



The sub-master fader

Please Note:
To control the dimming levels of lighting scenes (stored on action buttons) using the sub-master fader, the main dimming attribute for those fixtures must be set to *HTP* precedence on the patch screen. See "Function List", p.17, for details on how to do this.

Mute Button

A mute button situated under the fader is used to mute the sound if the action button contains a sound or video event, turn all the lighting off that is used in a scene or ***Chase*** event, or turn both lighting and sound off if it is a light and sound sequence. Mute does not stop scenes, ***Chases*** or sound / video events from running - it simply turns the output off. Double-clicking on the mute button toggles it on or off.

Latch and Exclusive-letter Groups

The group display

Each individual action button can be set to either ***LA*** (meaning 'Latch') or to one of 26 exclusive-letter groups labelled ***A*** to ***Z*** by holding down the [Ctrl] key and then left-clicking or right-clicking on that description. Alternatively, you can hold down the [Ctrl] key and hit the required letter on the keyboard.

If an action button is currently set to a letter group and you wish to set it back to ***LA***, then hold down the [Ctrl] key and hit the 0 (zero) key.

If buttons are set to ***LA***, then any number of those buttons can be run at the same time. They must be turned off by: double-clicking on them again; by a trigger; or by using the **Stop** button when the appropriate action button is highlighted.

If set to an Exclusive-letter group (***A***, ***B*** etc.) then the group letter is displayed in a box at the top right of the button and only one of those buttons in that letter group will be allowed to be run at any one time. Clicking on another button set to that same group letter will turn off any other button set to that group letter which is running and any Hold or fade Out times, etc set for the out-going event will be used. See also the description for the **Action Sub Group Settings** menu in "Action Sub Group Settings", p.155.

Operation Options

The operation options display

Left / right-clicking (with the [Ctrl] key held down) on the display to the right of the Grp: display determines how an action button is 'operated' when it is triggered. The options are as follows:

On/Off

MIDI - the appropriate MIDI note / program change will turn the action button on when it is received and the action button will stay on until the same trigger is again received to turn it off.

Spacebar - Hitting [Spacebar] when the action button is highlighted and the action panel is on the left of the screen will turn it on. Hitting [Spacebar] again will turn it off UNLESS the event assigned to the action button is a ***Manual*** sequence in which case subsequent presses on the [Spacebar] will trigger the next step in that sequence i.e. it will act as the *Go* button for that ***Manual*** sequence.

Hold

This option has been provided specifically so that you can manually control how long an action button event is kept running via the following:

MIDI - the action button will be turned on when an appropriate NOTE ON command is received via MIDI (by holding down the appropriate key on an external MIDI keyboard or sending it from an external MIDI sequencer). If the key on the external MIDI keyboard is released (issuing a NOTE OFF command), or if the appropriate NOTE OFF command is received from an external MIDI sequencer, then the button goes off.

Spacebar - Hitting [Spacebar] when the action button is highlighted and the action panel is on the left of the screen will turn it on. Hitting [Spacebar] again will turn it off UNLESS the event assigned to the action button is a ***Manual*** sequence in which case subsequent presses on the [Spacebar] will trigger the next step in that sequence i.e. it will act as the *Go* button for that ***Manual*** sequence.

Go/Pl

This option has been specifically included so that the steps in any ***Manual*** sequences that are assigned to action buttons can be triggered using [Spacebar] or various inputs. If the event assigned to the action button is not a ***Manual*** sequence then ***Go/Pl*** works in exactly the same way as the ***On/Off*** setting described above. However, if the event is a ***Manual*** sequence then;

Spacebar and MIDI Input - the action button will be turned on when the appropriate trigger is received or [Spacebar] is pressed (when the action button is highlighted and the action panel is on the left of the screen). However, further receipts of the trigger or [Spacebar] presses will trigger the next step in that sequence and so on until it reaches the end of the sequence i.e. they will all act as the **Go** button for that ***Manual*** sequence.

On/Ex

All Trigger Inputs - If ***On/Ex*** is set (indicated by a red box in the top right of the button) and that action button is in an exclusive-letter group, then double-clicking on the button, using [Spacebar] or receipt of the appropriate trigger will turn the action button on. However, once it is turned on it cannot be turned off (except by using the motor control stop button or the **Clear** button on the action panel) and any other action button set to that letter group cannot be turned on either, until the event has finished, i.e. any trigger inputs for other buttons in that group are simply ignored until the running ***On/Ex*** event has finished. This option is provided so that action buttons can be set to run exclusively in that group and be allowed to finish. It is only suitable for events that automatically stop after a period of time such as ***Timed*** Sequences, sounds, video events, captured video with a selected To: time, scenes set to ***Flash***, ***Chases*** set to ***Once*** etc.

Off/Ex

All Trigger Inputs - This option works in exactly the same way as the ***On/Ex*** option described above, but it is triggered on the condition being off rather than on.

Default

The ***Default*** setting is used in conjunction with the **RD** button on the action panel or the **Action Panel > Run Default Action Buttons** item on the **Options** menu. Any ShowMagic event assigned to an action button can be made to run automatically provided that no other action buttons (in the same exclusive letter group - see previous page) are running. If ***Default*** is set for an action button (indicated by a green box in the top right of the button) and the **Action Panel > Run Default Action Buttons** item is ticked on the **Options** menu or the **RD** button is turned on (shown red), then the event assigned to that action button will run automatically if no other action buttons (in the same exclusive letter group) are on.

Example:

Here's an example application using an action button set to ***On/Ex*** with another action button set to ***Default***: Let us assume that you have a room which requires default background lighting until someone enters the room and pushes a button to start a light and sound presentation. The background lighting should fade out as the presentation starts. The presentation lasts for say 2 minutes and we wish it to run the full 2 minutes without being interrupted or re-triggered. After the 2-minute presentation has finished the background lighting fades back in. The background lighting remains on until someone else walks into the room, pushes the button and triggers the presentation again, and so on. Here is how it can be done;

1) Create a lighting scene for the background lighting with fade In and fade Out times of 2 seconds.

2) Drag that lighting scene onto action button *A001* and set that action button to ***Default*** and Grp: ***A***.

3) Create a ***Timed*** sequence for the 2-minute presentation.

4) Drag the ***Timed*** sequence onto action button *A002* and set it to ***On/Ex*** and Grp: ***A***.

5) Set the trigger **TG** for the action button containing the ***Timed*** sequence to an appropriate trigger.

6) Tick the **Action Panel > Run Default Action Buttons** item on the **Options** menu or click on the **RD** button to turn it on (then shown red).

Now, action button *A001* (the lighting scene) will run automatically (set to ***Default***) until someone pushes the switch to trigger action button *A002* (the ***Timed*** sequence) at which time action button *A001* will go off (the lighting scene fades out) and the presentation begins. During the running of the 2-minute presentation further presses of the switch will have no effect (because the button is set to ***On/Ex***). When the presentation finishes the default lighting scene fades back in again until the next person presses the switch, and so on. By using different sets of action buttons set to different letter groups you can achieve the above for multiple, independent rooms.

On TRG - If set to ***On TRG*** then the action button will be run when an 'on' state is detected from its selected trigger device. This is useful for running timed events that turn themselves off automatically.

When an action button set to ***On TRG*** is run then it will not be re-triggered if the trigger device switches from off to on again, i.e. if the event is already running any more 'on' triggers received will have no effect until the event has stopped.

The running of another action button - set to the same exclusive letter group - will turn an action button set to ***On TRG*** off.

Off TRG - Conversely, if ***Off TRG*** is set then the action button will be run when a trigger device (such as a physically latching switch) is turned off.

When any of the above settings are used, ShowMagic will check for a *change* in the condition of the trigger then act on that change, if appropriate, *at the time of the change*. The next four settings differ from the above in as much as the 'current condition' of a trigger input *is checked constantly*:

CC On - Checks whether the trigger is currently on, and if so, runs the action button.

CC Off - Checks whether the trigger is currently off, and if so, runs the action button.

CC On/Ex - Checks whether the trigger is currently on, and if it is the event is run and will not be turned off until it is finished in the same way as the ***On/Ex*** setting.

CC Off/Ex - Checks whether the trigger is currently off, and if it is the event is run and will not be turned off until it is finished in the same way as the ***On/Ex*** setting.

Triggering Action Buttons

Besides running and stopping events assigned to action buttons by double-clicking on the action button, clicking on the **Go** button (or pressing [Spacebar]), they can also be triggered in the following ways (as described later in this section):

a) When ShowMagic receives selected notes or program change commands from the MIDI port, e.g. using a MIDI keyboard or MIDI sequencer etc. Within this section we will assume that you have a MIDI keyboard connected to a PC MIDI port.

b) When a wireless 'Media Player' remote controller is used.

If any action buttons are triggered, by any means, the fade In and Out times set for that event will be used.

The various action button triggering options are as follows:

MIDI Input Triggering

Situated just below the details display are the MIDI trigger displays.

The MIDI trigger display

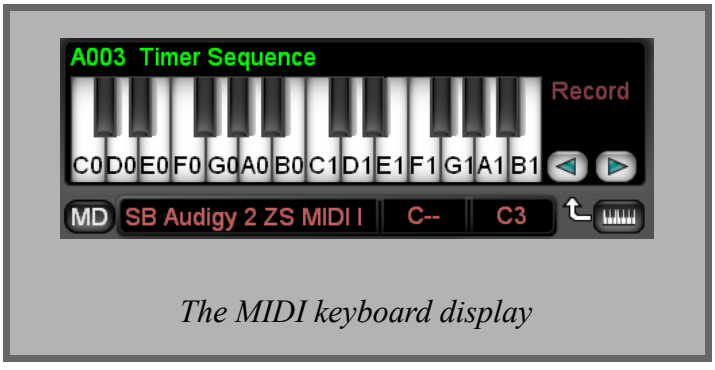
The first display shows what PC MIDI port is set to receive MIDI data. Right-click on this to select, via a pop-up menu, a port if your PC has more than one - see "MIDI Port Settings", p.156, for information on how to enable selected MIDI ports. Clicking on the **MD** button with the [Ctrl] key held down toggles MIDI triggering on (button shown red) or off (shown grey) for the currently highlighted action button. Right-clicking on **MD** with [Ctrl] toggles MIDI triggering on or off for all action buttons on that page. If the **MD** button is off then the action button will not be affected by any MIDI input. If it is on then the 'MIDI note', 'program change' or 'control change' number shown in the third display (note ***C3*** in the example above) will trigger that action button. The ***C*** -- setting tells ShowMagic to scan all MIDI channels for that note, program change or control change number. To set a specific MIDI channel, right-click on ***C*** -- and select a channel from the pop-up menu. The action button will then only be triggered if the note/number shown is received on that specific MIDI channel.

Right-clicking on the note in the third display produces a pop-up menu on which you can select ***Trigger By Note***, ***Trigger By Program Change*** or ***Trigger By Control Change***.

Trigger by Note

For setting a MIDI note, click on the button depicting a music keyboard to change the details display into a music keyboard graphic.

Click on one of the keys on the keyboard graphic will then set the trigger to that note. The arrow keys on the right are used to scroll through the octaves from *C0* through to *B7*.



The MIDI keyboard display

Alternatively, whilst the music keyboard graphic is shown, pressing the actual note on the external keyboard will also set that note to trigger that action button if the **Action Panel > Midi Record Enabled** item has been ticked on the **Options** menu. The next action button is also automatically highlighted ready for you to press another MIDI key on the external keyboard - useful if you wish to record MIDI notes for multiple, sequential action buttons.

Trigger by Program Change or by Control Change

If either of these is selected then you can set that trigger option by clicking on the dark pink **Record** item to the right of the keyboard graphic to highlight it and then push up or press the required fader or button / pad on your external MIDI interface to select that trigger. Alternatively, you can click on the keyboard keys on the keyboard graphic to set the value without having a MIDI interface attached. Finally, click on **Record** item to turn it dark pink and disable the record function.

Clicking again on the button depicting a music keyboard will revert back to the action button details display.

If you tick the **Master Level Control** item on the drop-down menu then any control change values being received will be used to control the level of that action button rather than just starting and stopping it.

You can select a MIDI note to start / stop / control an event on an action button, but in addition you can also select different MIDI notes to go to the ***Next*** step (if it is a manual sequence), go ***Back*** a step (if it is a manual sequence) or ***Pause*** everything that is running in that event. This can be done by pressing the [Tab] key to select the function and pressing/clicking on the MIDI note for that function.

To disable the extra *Back*, *Pause* and *Next* MIDI triggers for that action button, simply press [Tab] to call up ***Back***, click on ***Back*** with [Ctrl] held down to turn the word dark pink and then press [Tab] three times.

Wireless Media Player Remote Controller

There are many wireless 'Media Player' remote handheld devices on the market for controlling programs such as Windows Media Player. These devices output common commands for Play, Pause, Stop, Previous Track, Next Track, Volume +, Volume - and Mute.

You can use one of these devices to control the currently highlighted action button (when the action panel is on the left of the desk, or the user screen is displayed) by first installing the device on your PC / laptop (follow the instructions supplied with the device).

The various buttons on the handheld devices do the following:

Play/ Pause This plays the event if it is stopped, pauses the event if it is playing and pressing again resumes.

Stop This stops the event if it is playing.

Prev. If the event is a manual sequence this jumps to the previous step (set to ***Go***) and runs from there.

Next If the event is a manual sequence this jumps to the next step (set to ***Go***) and runs from there.

Vol+ This increases the volume of the Audio Master fader on the Master Panel.

Vol- This lowers the volume of the Audio Master fader on the Master Panel.

Mute This mutes the Audio Master fader on the Master Panel and pressing this button again un-mutes it.

User Screen - Hide

If this item is ticked then that action button will not be displayed on the user screen - there will just be an empty space where the button would normally be. This option is useful if you want to deny the user access to the event stored on that action button (irrespective of whatever page of action buttons it is stored on). It is particularly useful, however, if used in conjunction with the Conditional settings described next.

Conditional

The settings in this section enable you to quickly and easily apply conditional logic to the normal running (or triggering) of an action button. This should eliminate the need to have to set up complex switches (hardware logic) by performing all the logic in software. The idea of the Conditional settings is this - an action button is only 'enabled' (allowed to be triggered) depending on the condition of another action button i.e. it can only be triggered if the other action button is running OR if the other action button is not running. This is different to exclusive groups using ***A***, ***B*** etc; We will assume we are using action button numbers *A001* and *A002* and *A002* is the currently highlighted button.

Off

If this is ticked then conditional logic is not applied to this action button.

Prev OFF

If this is ticked then the Previous action button (*A001*) must be off for this button (*A002*) to be enabled so that it can be run. If action button *A001* is running then *A002* cannot be run - it is disabled.

Prev ON

If this is ticked then the Previous action button (*A001*) must be on in order for this button (*A002*) to be enabled so that it can also be run. If action button *A001* is not running then *A002* cannot be run - it is disabled.

Act OFF

If this is ticked and an action button number is selected in the drop down menu below it e.g. ***Act A1***, then this action button can only be run if the selected action button is off. This function is useful if you want to set the conditional logic for a number of action buttons to be dependent on one other action button.

Act ON

This works in a similar way to the above, but is conditional on the selected action button being on, not off.

LTP Trigger

Selecting a DMX % value from the drop-down menu will set the LTP Trigger threshold. Any DMX value received above that threshold value will be used to trigger that action button.

Any DMX values below that threshold percentage are ignored.

Set Page To DMX

If you had assigned a number of scenes to consecutive action buttons on a page, and you wanted the DMX input channels, that correspond to the action button numbers, to be used to control those buttons, then you can use the **Set Page To DMX** button to do this automatically for you in the following way:

1) Highlight any one of the action buttons on the required page.

2) Double-click to the right of **TG** to call up the Set Action Trigger dialogue box.

3) Select the required % trigger level for the LTP Trigger.

4) Click on the **Set Page To DMX** button - this will then remove the dialogue box.

You will then see that each of the action buttons on that page has been set to trigger by DMX channels and you will also notice that:

a) The DMX channel will correspond to the action button number e.g. DMX channel ***001*** will be set to trigger action button *A001* etc.

b) The **LTP Trigger** percentage that you selected before clicking on the **Set Page To DMX** button will be applied to each action button on that page.

c) Master control (***MTR***) has been selected for each action button on that page.

Quick-Find Feature

Double-right-clicking on an action button will put that event's panel and button on the other side of the desk.

Using Key Activated Presets on the Action Panel

In a similar way to the fixture panel, the **Key Activated Presets** feature (see "Using Key Activated Presets on the Fixture Panel", p.35) can be used on the action panel. If the action panel is on the left of the desk, and an action button containing a lighting scene is running and highlighted, pressing the keys [D] for Dimmer, [G] for gobo etc. enables you to select those presets on-the-fly providing you with full 'Live' control of those functions without having to store different scenes for each setting on different action buttons.

Example:
Let's say you have recorded a scene containing the color functions for a group of fixtures set to red. You then drag and drop that scene onto an action button. By running that action button (on the left hand side of the desk of course) and highlighting it, the fixtures will go to red as you would expect, however, you can now hold down the [C] key to call up the color presets panel (on the right of the desk) and by clicking on any color preset button set that group of fixtures to that color preset.

This feature works for any functions recorded into a lighting scene assigned to an action button that is highlighted and running on the left hand side of the desk. If the lighting scene has been recorded with only values for the color function, holding down [C] will enable you to change the color setting live as above, but holding down [G] will have no effect because no values for the gobo function were recorded to that scene.

If you want to be able use this feature to change the color, gobo, dimmer etc. using a single action button, then you must record all those functions into the lighting scene that you create for that action button.

Please Note:
The **Key Activated Presets** item on the **Options > Action Panel** menu must also be ticked in order for this feature to work on the action panel.

Setting Editable Events for the User Screen

If the **Options > User Screen Access > Realtime Edit** item is ticked, then a dark blue **UE** option will appear in the details displays for action buttons. You will also notice that an **Edit** button will appear on the user screen. If you highlight an action button, hold down [Ctrl] and click on the **UE** option a **User Screen Realtime Edit** dialogue box will appear and this enables you to determine what can be edited - directly from the user screen - for the event on that action button, depending on what type of event is loaded onto the action button.

The options are:

Realtime Edit Enable - ticking this item enables realtime editting on the user screen for that specific action button.

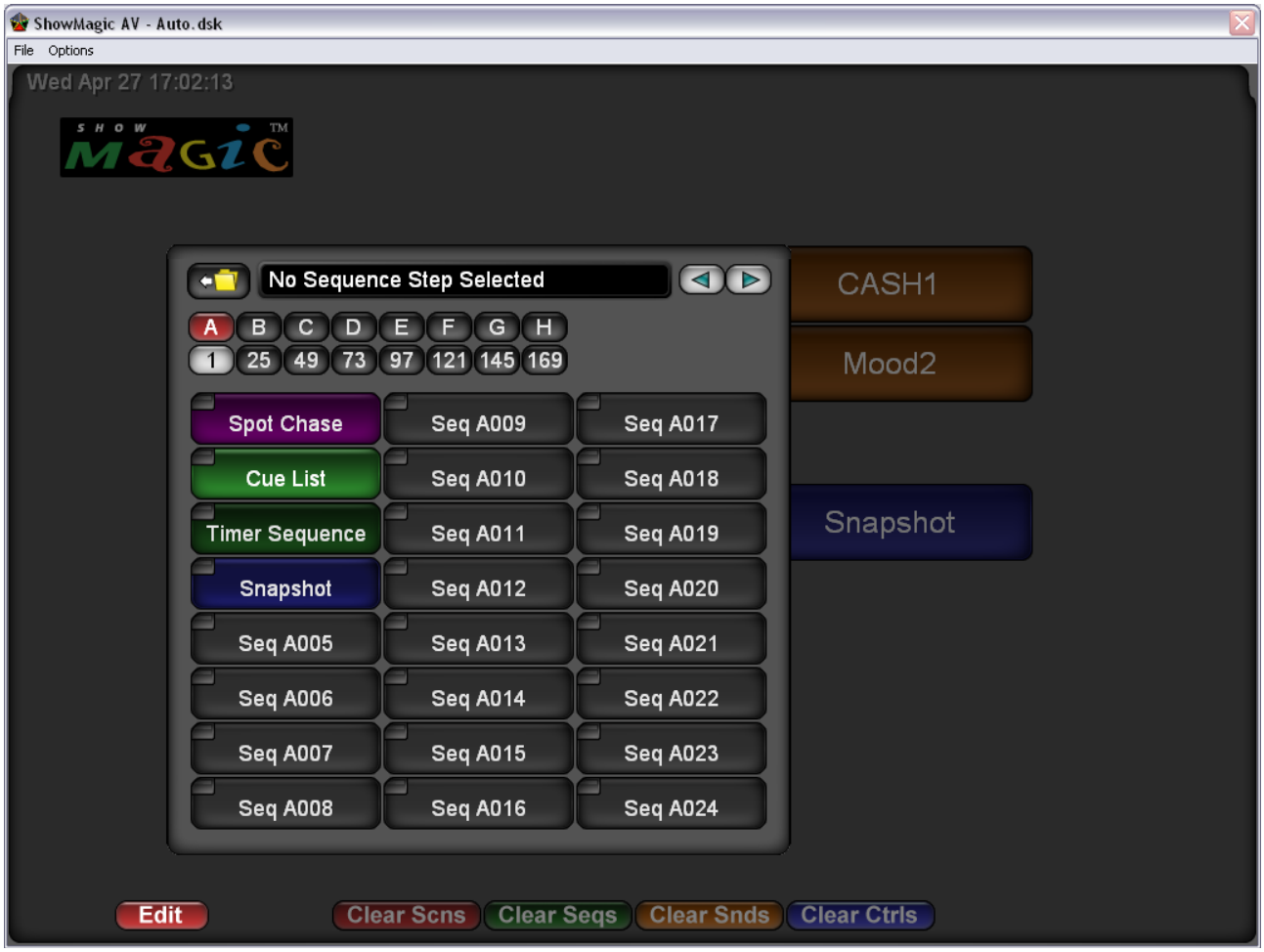
Enable Bank Page Access - If this item is not ticked, then the user can only replace the event on this action button with another event of the same type and on the same page of events. If this item is ticked, it provides access to page and bank selector buttons enabling the user to replace this event with another event of the same type on any bank or page.

Enable File Replace - ticking this item enables the user to replace any file-based event with another file of the same type.

Enable Sequence Step Edit - if the event on the action button is a *Manual*, *Chase*, *Random* or *Snapshot* sequence then ticking this item enables the user to replace a sequence step with another event of the same type.

Please Note:
This option is not available for *Timer* sequences.

Realtime Editing on the User Screen



In the above example (with the demo desk loaded) all the realtime edit options described in the previous section have been selected for the *Cue List* sequence on the action panel. The *Cue List* action button has then been highlighted on the user screen and the **Edit** button has been clicked producing the screenshot above.

Replacing an Event

If you want to replace the *Cue List* sequence on that action button with another sequence, then simply use the page and bank selector buttons to select the approriate page (if required), and then double-click on the required sequence button. The sequence assigned to that action button will then be replaced and you will be returned to the normal user screen display.

The same system applies for replacing other non-sequence events, and if the event is file-based (a sound event etc.) you can click on the file folder button (above the bank selector buttons) and load a different file onto that action button, and subsequently into that event button on its panel.

Replacing Sequence Steps

If the event on the action button is a *Manual, Chase, Random or Snapshot* sequence, the individual steps can be replaced in a similar manner. Simply use the left and right arrow keys (to the right of the window labelled ***No Sequence Step Selected*** to select the sequence step number - the page containing that event will then be displayed, use the bank and page selector buttons to select another event page, if necessary, containing the event you want to place on that step, and double-click on the event button to put that event into that step. If the original event in the step is a file-based event you can also use the file folder icon to load a different event into that step from a file. The event step will then be replaced with that new file-based event and subsequently the appropriate event button on its event panel will also now contain that new file-based event.

Section 13 - Main Desk Screen Options Menus

Patch Screen Menu

This item selects the patch screen (see "Patch Screen", p.11).

User Screen Menu

This selects the user screen (see "User Screen", p.163).

General Settings Menu

Enable

Alt + F4 Quit

If ticked, pressing [Alt] with [F4] will instantly quit from ShowMagic - use with care!

Clip Cursor

If ticked, the mouse cursor is restricted to movement within the ShowMagic screen (1st head) only on a multi-head graphics card or interface.

Control Key

If ticked, the [Ctrl] key must be held down when changing most items shown in blue.

Sound To Light

The sound-to-light facility for triggering FX scenes and normal scenes in *Chases* can be enabled or disabled by ticking or un-ticking the Enabled menu item.

Desk Precedence

None (NTP), **Latest (LTP)** or **Highest (HTP)** - The overall precedence of the desk can be set to any one of these by ticking it.

Disabled Event Layering - On a desk set to ***LTP***, it is the latest event that is run whose values are sent to the DMX channels of fixtures contained in that event. E.g. if a 60 BPM chase was run for fixtures *01* to *04* first, followed by a 30 BPM chase for the same fixtures, the channels will be updated by the 2nd 30 BPM chase because that chase was the latest event to be run. If that chase is stopped control reverts back to the earlier 60 BPM chase. If this item is ticked to disable event layering then the logic for scene processing reverts back to strict desk precedence. E.g. the DMX values for fixtures 01 to 04 would be updated by both the 60 BPM chase and the 30 BPM chase on a strict LTP basis.

Boot Delay

If for any reason there is a conflict between other programs or utilities that are being auto-run on boot-up along with ShowMagic, you can set a boot delay with this drop down menu between 1 and 20 seconds. ShowMagic, when it is auto-run, will then wait for the duration of this boot delay time before initialising any resources that may cause any conflicts.

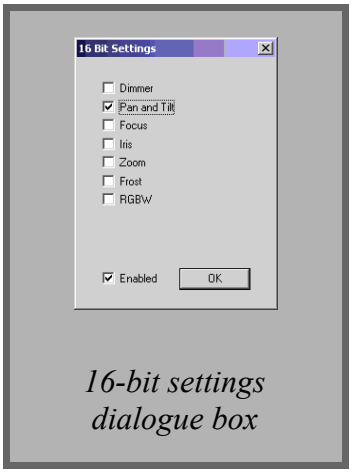
Live Mode

If this item is ticked, then the logic of how channels are updated when running scenes is changed from the ***Normal*** operating mode to ***Live*** mode as described in "'Normal' and 'Live' Modes", p.49. ***Auto Set*** will automatically set all action buttons to run on the respective DMX input channels (*A001* from DMX channel 001, *A002* from DMX channel 2 etc.) and use the selected Threshold and LTP trigger settings.

Other Settings Menu

16-Bit Settings

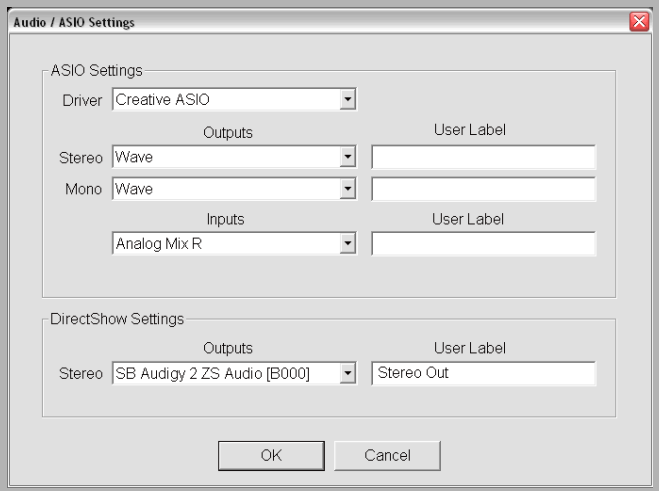
Ticking ***Enabled*** and then ticking the appropriate functions, enables 16-bit operation for fixtures possessing fine channels such as fine pan, fine tilt, fine focus etc.



16-bit settings dialogue box

Audio / ASIO Settings

Selecting this item produces an Audio / ASIO Settings dialogue box on which you can select what ASIO drivers to use with ShowMagic:



Audio / ASIO settings dialogue box

Any drivers found by ShowMagic are listed, and are selectable, from the drop down menu. Once the drivers are selected they are stored, and they will be remembered by ShowMagic each time you run it.

There is an option to apply user labels to the DirectShow and ASIO audio input and output channels. This makes it easier to identify the channels when using audio routing events etc. To apply a label to each channel simply select the channel from the drop-down menu and enter the label in the box to the right of it. If user labels have been applied to

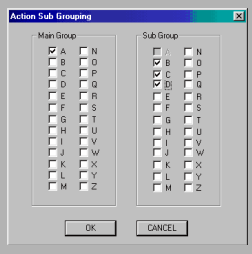
channels then those labels will replace the default labels as used by Windows. The labels are also shown running down the side of the faders for each channel on the ASIO 'Input - Output Router' display.

Action Sub Group Settings

Exclusive letter groups for action buttons (as described in "Latch and Exclusive-letter Groups", p.142) can be used so that any action button set to group ***A*** (for instance) will automatically turn off any other action button set to ***A*** that may be running. This is a very useful feature for ensuring that only one of a group of action buttons can be running at any one time. What if, however, you want to set up the action buttons so that the running of a single action button can automatically turn off action buttons of it's own group but also turn off other action buttons of different exclusive letter groups as well?

The **Action Sub Group Settings** menu can be used to select what other letter groups (sub-groups) will be turned off when an action button set to it's own group (main group) is turned on. Click on the **Action Sub Group Settings** item on the **Options** menu (or double-click on the blue group letter on the action panel) and a dialogue box will appear.

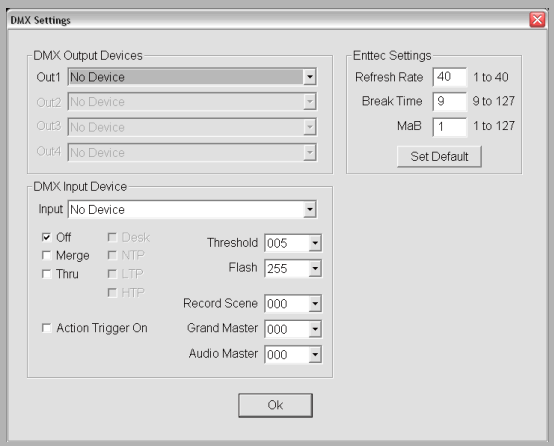
If you tick Main Group ***A***, tick Sub Groups ***B***, ***C*** and ***D*** and click on **OK**, any action buttons set to ***A*** will turn off action buttons set to ***A***, BUT they will also now turn off any other action buttons that are set to groups ***B***, ***C*** or ***D***.



Action sub group settings dialogue box

DMX Settings

Selecting this menu item will display a Dmx Settings dialogue box.



DMX settings dialogue box

Any devices that ShowMagic sees (either physically or via Windows registry entries) are listed, with the number of those devices found and any relevant Comm port that they occupy, in the DMX Output Devices drop down menus.

DMX Output Devices

To set the first DMX output device, simply select it from the Out1 drop-down menu and do likewise for Out2, Out3, & Out4 if appropriate.

If using FTDI type USB to Serial interfaces - you will need to select the correct interface from the drop-down menu as it is not possible for ShowMagic to 'interrogate' them to distinguish between them. This is due to limitations of the devices - ShowMagic can only detect that a USB to Serial Interface is assigned to a comm. port, it cannot tell what type it is, so it lists all possible devices that could be occupying that port(s) and it is up to you select the correct one.

Art-Net (EXPERIMENTAL) - If you have installed Art-Net on your PC and are using any Art-Net interface(s) then these will also be displayed in the DMX Output Devices drop down menu.

General Settings

If you are using low-cost DMX fixtures with an FTDI type DMX interface and you are experiencing problems with those fixtures - such as 'twitching' - it is possible that the default DMX Refresh Rate (40 per second) is too fast for those fixtures. To remedy this you can try reducing the refresh rate using this section of the dialogue box. The Break Time and MaB settings should not need to be changed.

If you are experiencing problems where the DMX interface is 'locking up' due to mains power fluctuations, faulty DMX fixtures sending spikes back down the DMX line etc. Then ticking the Reset On Error item in this section will instruct ShowMagic to attempt to reset the interface if it finds that it has lost communication with the interface.

Please Note

Due to the nature of such errors it is not always possible for ShowMagic to reset the interface, and in any case, the cause of these errors should be discovered and rectified at the source.

MIDI Port Settings

Midi Output Devices - A list of the available MIDI ports that ShowMagic has found is given here. Click on the ports that you wish to enable for MIDI output.

Midi Input Devices - A list of the available MIDI ports that ShowMagic has found is given here. Click on the ports that you wish to enable for MIDI input.

Threshold - When using the ***Vol-M*** and ***Vol-T*** settings for starting / stopping and controlling the level of an event on an action button the minimum threshold MIDI value that will trigger the event can be set here.

Action Trigger On - If this box is ticked then any action buttons set to be controlled by MIDI volume levels will be enabled. If it is not ticked then any MIDI volume inputs are ignored by the action buttons.

DMX to Midi - If you are using a MIDI dimmer pack then you can select DMX to Midi On, select the MIDI port to use for MIDI lighting control output from the drop-down menu, select the MIDI Channel - Midi Ch. (***1*** to ***16***) - and the DMX address range ***1*** - ***64***. Now if any DMX fixtures have been set to the channels within that DMX address range they will receive lighting control instructions via MIDI rather than DMX.

Action Panel Menu

Auto Increment On Spacebar - If you are using the action panel on the left, or the user screen**,** and you are using [Spacebar] to trigger the currently highlighted action button, ticking this menu item will cause the next action button to become highlighted ready for triggering. In this way action buttons can be triggered sequentially using just the [Spacebar] key.

Disable Midi Note Changes - If this item is ticked it will remove the keyboard icon from the action panel and prevent the current midi triggering options from being changed.

Key Activated Presets - If this item is ticked, the **Key Activated Presets** feature will be enabled. If un-ticked the keys will have no effect on the action panel.

Midi Record Enabled - If this item is ticked, you can select what MIDI note triggers the highlighted action button by pressing the required key on an external MIDI keyboard whenever the keyboard icon on the action panel is shown - see above.

Number Action Buttons - If this item is ticked then ShowMagic will print the numbers of the action buttons (A1**,** A2 etc.) on the bottom left of those buttons.

Run Default Action Buttons - If this item is ticked, any action buttons set to ***Default*** will then be automatically run if no other action buttons in the same letter group are running.

Fixture Panel Menu

Display Fixture Name - if this is ticked then the labels for fixtures are displayed down the left of the main fader columns on the fixture panel.

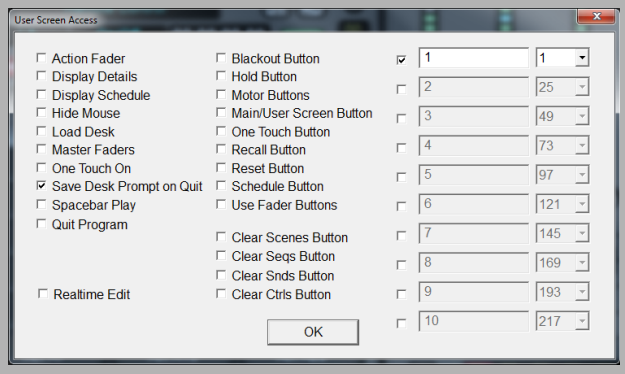
Monitor Panel Menu

Display DMX Percentage - by ticking this item, the DMX outputs on the monitor panel will be shown as a percentage (***0 - FL***) rather than a DMX value of ***0 - 255***.

Display Midi Note - by ticking this item, the first byte (*B1*) on the MIDI Monitor display will be shown as a note and not as a value.

User Screen Access Menu

Selecting this item brings up a User Screen Access dialogue box.



User screen access dialogue box

The user screen (described in "User Screen", p.163) has been designed so that you can program all the necessary ShowMagic events for a show or venue, assign them to action buttons, and then provide your client with a simple-to-use screen from which they can select pre-programmed sequences, lighting scenes etc. In other words, the end user need not get involved with any of the intricacies of programming or using the main desk screen; they can just quickly and easily start and stop the large action buttons displayed on the user screen.

This dialogue box has been provided to allow you to select what is available on the user screen. Options are shown on the left, buttons that can be displayed are shown in the middle, and on the right is a page selector area where you can tick what pages of action buttons are accessible on the user screen and also label them:

Action Fader - If ticked, a sub-master fader and mute button will appear on the user screen that enables the user to adjust the levels of the events in the currently selected action button on the user screen.

Display Details - If ticked, the details display will appear on the user screen (as on the action panel) that shows the details of the currently highlighted action button.

Hide Mouse - If ticked, the mouse cursor will not be displayed. For use with a touch screen monitor.

Load Desk - If ticked, the **Load Desk** option will be made available in the user screen **File** menu.

Master Faders - If ticked, the Grand Master (**GM**) and Audio Master (**AM**) faders, and their mute buttons, will appear on the user screen.

One Touch On - If ticked, one touch (rather than two) on a user screen button will run/stop that button.

Save Desk Prompt on Quit - If this is ticked (the default), then the user will be prompted to save the desk if quitting from ShowMagic on the user screen. If not ticked no prompt will appear.

Spacebar Play - If ticked, [Spacebar] can be used to start / stop the currently highlighted action button on the user screen.

Quit Program - If ticked, **Quit Program** will be made available on the user screen **File** menu.

Realtime Edit - If ticked, this will enable various edit functions to be enabled for action buttons when they are being viewed on the User Screen. See "Realtime Editing on the User Screen", p.151, for more information.

Blackout Button - If ticked, a blackout button - labelled **Black** - will be accessible on the user screen.

Hold Button - If ticked, the DMX **Hold** button will be provided on the user screen.

Motor Buttons - If ticked, large motor control buttons - Rewind, Stop, Pause, Play - will appear in the top left which will change depending on what action button is highlighted on the user screen at the time.

Main/User Screen Button - If ticked, a **Main** button will be displayed on the user screen and a **US** button will appear on the action panel. The user screen can then be accessed from the action panel by clicking on the **US** button, and conversely, the main screen can be accessed from the user screen by clicking on the **Main** button - for easier operation when using a touch screen.

One Touch Button - If ticked then a button labelled **One Touch** will appear on the user screen that enables the user to switch between a single click being required to start or stop an action button (**One Touch** button shown in red), or whether a double-click is required (**One Touch** button shown in grey).

Recall Button - If ticked, a **Recall** button will appear on the user screen. If the user double-clicks on the **Recall** button to turn it on (then shown red) the current running state of any buttons (including their fader levels) on any pages that the user has access to on the user screen will be recalled when ShowMagic is restarted. If the button is not on (shown grey) then the buttons will be set to their normal on / off states when ShowMagic is re-started.

Reset Button - If ticked, a **Reset** button will appear on the user screen. If the user double-clicks on this **Reset** button all events will be stopped and any fixture faders on the desk will be cleared down.

Use Fader Buttons - If ticked, then the sliders on the user screen will be replaced by Up and Down buttons. These buttons are easier to use on a touch screen then the regular faders. Touch the Up button once to increment the level by one notch, or touch the Down button to decrement the level by one notch. If you hold either button, then the level is constantly incremented or decremented.

As with the sliders, the Up and Down buttons for the currently highlighted action button will appear in the color appropriate to the event stored on that action button. If the event is a lighting scene, the scene can be ‘faded in’ manually using the Up button. The audio master Up and Down buttons are always displayed in orange and the grand master lighting Up and Down buttons are always displayed in blue.

Clear Scenes Button, **Clear Seqs Button**, **Clear Snds Button** & **Clear Ctrls Button** - If any of these are ticked, then a smaller version of that clear button (as found on the Master Panel) will be made available at the bottom of the User Screen.

Page Selectors - You can determine what pages of action buttons can be selected on the user screen by ticking the appropriate items here. These pages can then be selected by the user via the page selector buttons labelled 1, 2, 3 etc. that then appear on the user screen. The labels *1*, *2*, *3* etc. are initially used on these page buttons. The labels can however be replaced with more descriptive labels such as *Lighting, Motor Control* etc. by clicking on, and typing in, the boxes provided.

Auto Menu

Load Desk - If ticked then ShowMagic, when it is run, looks for a file called *auto.dsk* in the default desks folder and, if the file exists, it will be automatically loaded. A desk set-up can be saved as different *.dsk* files by simply saving the desk under different names, so if you wish to make use of this function, first save your desk with the name you would normally use for it and then save it again as *auto.dsk.*

User Screen - If ticked then ShowMagic, when it is run, will automatically display the user screen as previously configured. The status of the **System Locked** menu item will also be preserved, so if the desk has been locked, the user will not be able to access any other screen unless they know the password and how to unlock the user screen.

Save - If ticked the selectable duration shown ticked i.e. 5, 10 or 15 minutes will determine how often the desk is saved automatically. If Off is set then Auto-Save is disabled and durations are ignored.

System Locked

If this item is ticked then only the currently selected page on each of the two currently selected panels will be available and all editing functions on the desk will be locked out; action, scene, sound buttons etc. can still be turned on and off in the normal way, and certain audio / lighting faders can be adjusted, but all programming and recording functions are disabled. Also, if a password has been set, and this item has been ticked, when you select the user screen, the **Options > Main Screen** menu item on the user screen will be disabled and a password will need to be entered in order for the user to exit the user screen and return to the main desk screen. This enables you to restrict end users to the user screen; they will not be able to access the main desk screen at all, unless they know the password.

If a password has been set (using the **Options > Change Password** menu item on the patch screen) this password will be requested if you attempt to lock or unlock the desk, or exit the user screen.

If a valid password is entered the **System Locked** item will be locked or unlocked as appropriate.

If an invalid password is entered you are notified and the attempt to lock / unlock the system will be cancelled.

The Notepad Menu

System Notepad

Selecting this menu item will produce a notepad that you can use to make notes on system specific items. Only one system notepad is available and it is stored automatically along with other system specific settings such as the type of output you are using with ShowMagic and so on.

Desk Notepad

Selecting this menu item will produce a notepad that you can use to make notes on desk specific items. This notepad is saved along with the desk (using the ***Save Desk*** and ***Save Desk As*** menu items) so each time you load a desk file its notepad is loaded with it.

To use a notepad simply select one of the above, type in your notes and then click on the Enter button. If it is the System Notepad the contents will then be saved automatically to disk. If it is a Desk Notepad the contents are saved when you save the desk.

Start Up Notepad

This is similar to the Desk Notepad. The difference is that it is used to display messages or instructions on a notepad dialogue box when ShowMagic is started up. Selecting ***Start Up Notepad - Edit*** from the Notepad menu will produce a notepad dialogue box in which you can type messages. If you then tick the ***Start Up Notepad > Enabled*** item from the Notepad menu this notepad will then automatically appear when ShowMagic is started.

Quit Notepad

This works in a similar way to the ***Start Up Notepad***, but is used to display messages or instructions when quitting from ShowMagic.

Both the ***Start Up Notepad*** and the ***Quit Notepad*** are saved in the desk file, so each desk that is loaded can have different Start Up and Quit notepad messages.

Section 14 - User Screen

Please Note:
This section makes reference to scheduling features which are not available in the SL series of models.

The user screen has been designed as a simple user interface for controlling a ShowMagic desk. It is a full size screen and it utilises action buttons, but these buttons are 50% bigger on the user screen to make it more suitable for use with touch screens.

Example:
To best explain how to use the user screen, and to introduce some other useful tips regarding using action buttons and the scheduler, we will use a theoretical, simple application in which you have been commissioned to install and program a ShowMagic system to run the lighting in a nightclub. Here's the brief:

- The nightclub has some background lighting that needs to change automatically at different times of day (early, mid and late evening) via the ShowMagic scheduler.

- There is also an area that is used sometimes as a dance floor and sometimes as a stage floor for artistes (singers, comedians etc.). Different colored par cans are used for illuminating the stage area.

- When the dance / stage floor is not in use the background lighting is controlled solely by the scheduler.

- When the floor is being used for dancing the background lighting continues to change as scheduled.

- When the floor is used as a stage however, the background lighting needs to drop down to a dimmed level and stay there until the stage show has finished, and an appropriate background scene is selected.

- The club owner wants to be able to select the different lightshows for the floor area by simply touching different options on a touch screen.

The user screen is ideal for this, and here is how it can be done:

1) Create the early, mid and late lighting scenes for the background lighting, drop them onto action buttons, set their exclusive letter groups to ***B*** (for 'background'), set the buttons to ***On/Off*** and then create your schedule using these action buttons e.g. *Early Background* ***In*** at *19:00:00*, *Mid Background* ***In*** at *21:00:00* and so on.

   Please Note:
   You only need to set an ***Out*** time for the last of these action buttons in each scheduled day, because as a scheduled ***B*** group button comes on, it automatically turns off the previous action button set to group ***B***.

2) Create a lighting scene that dims the background lighting (for when there is a stage show) and drop this onto an action button. Set its exclusive letter group to ***B*** and set the button to ***On/Ex***. The ***On/Ex*** setting means that when it is run before a stage show, it turns off any other background scene and no background lighting scenes can then be run (even if scheduled) until the stage show is over and this scene is manually turned off.

3) Create some sound-to-light activated chase sequences and some lighting scenes for the par cans in the dance / stage floor area, drop them onto action buttons, set their exclusive letter groups to ***D*** (for 'dance floor') and set the buttons to ***On/Off***.

The action buttons will then look something like this:

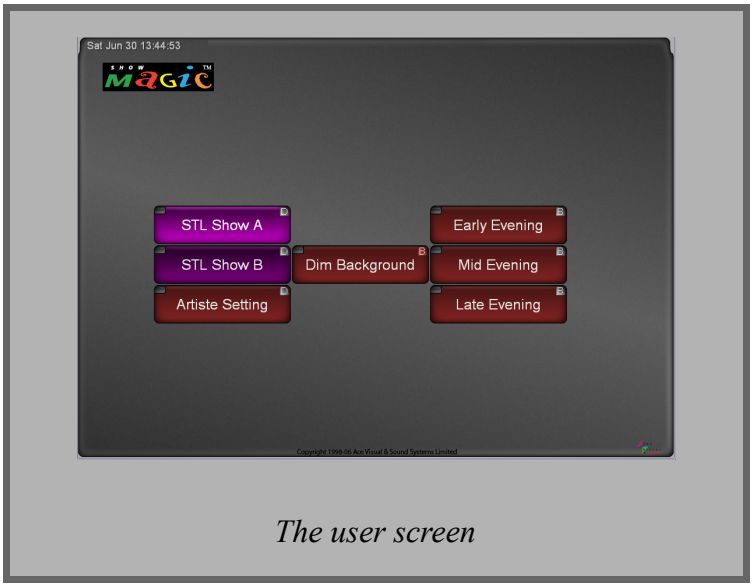
Action buttons

You will notice that the events have been dropped onto the action buttons in a particular order; dance floor events in the left column, *Dim Background* scene in the middle column and the other background scenes in the right column. This has been done because the way in which you organise events onto action buttons determines how they appear on the user screen, as you will see.

Select the ***User Screen Access*** item from the **Options** menu and a User Screen Access dialogue box will appear.

The User Screen Access dialogue box allows the programmer to select what action buttons and faders / control buttons, such as the schedule On / Off button etc., the end user has access to.

We only want the user to access the first page of action buttons on the user screen so tick the **Page 1** item in the right column and click the **OK** button.



The user screen

Select the **User Screen** item from the **Options** menu and the user screen will be displayed. You will notice that the action buttons are laid out in the same order and positions as on the action panel and any action buttons that are empty are simply not displayed at all.

The whole purpose of the user screen is to limit what the end user sees on the screen, to keep it as simple as possible for them to use. The person who programs the desk can decide exactly what functions the end user can and cannot access on the user screen by using the **User Screen Access** menu item from the main screen **Options** menu.

The programmer can also force ShowMagic, when started, to automatically go to the user screen and prevent the end user from accessing any other part of the ShowMagic desk by using the **Auto > User Screen** and **System Locked** items on the main screen **Options** menu. This can be done in the following way:

1) Tick the **Load Desk** and **Run Schedule** items (if required) from the **Options > Auto** menu and then tick the **User Screen** item on the **Options > Auto** menu. When ShowMagic is later re-started it will then automatically display the user screen instead of the main desk screen.

2) Select the **User Screen Access** item from the **Options** menu and the **User Screen Access** dialogue box will appear.

3) Tick the functions and page buttons that you want to appear on the user screen and then click on the **OK** button.

4) Select the **System Locked** item on the **Options** menu, type in the password (assuming you have created one on the patch screen), and click on the **Enter** button. The system will now be locked.

5) Select the **User Screen** item from the **Options** menu and the user screen will be displayed. The **Main Screen** item on the user screen **Options** menu is now disabled and the user cannot access the main desk screen; they are limited to the user screen only.

Unlocking the user screen

To access the main desk screen again, hold down the [Shift] key and then press the [Esc] key. An **Enter Password** dialogue box will appear. Enter the correct password and click on **Enter** and this password will return you to the main desk screen. The main desk will still be locked so select the **System Locked** item and enter the password as normal to unlock it.

Quitting the Program

To quit from ShowMagic select **File > Quit Program** on the main desk screen or the user screen menu.

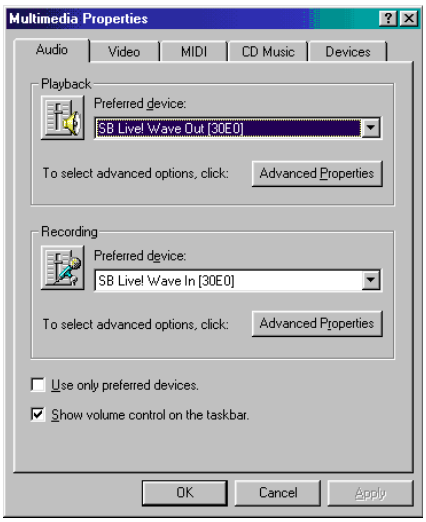
If a schedule or any events are running you will be prompted, as a safeguard, to turn them off or not. You will also be prompted as to whether you wish to save the desk or not - click on the buttons as appropriate.

The 'Close Window' cross at the top right of the window is also disabled as a safeguard. You can only quit ShowMagic via the **File > Quit Program** menu items on the main desk or user screens.

Section 15 - Appendix

Appendix A - Setting up Multi I/O Soundcards

If you are using a SoundBlaster as a primary soundcard on a Windows XP system then select this soundcard as the preferred device in the *Windows - Control Panel - Multimedia Properties* dialogue box as shown:

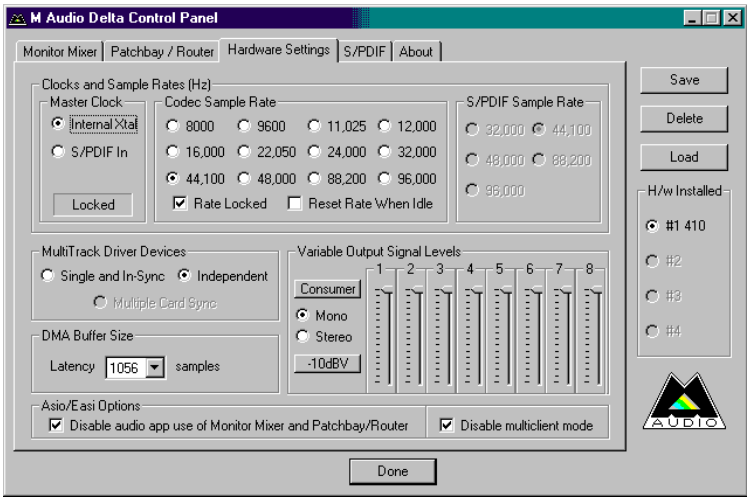


Multi-output soundcards have a monitor facility that can be used to combine one or more of the output channel pairs in a single 'monitor' channel pair. This facility is used mainly in music recording applications for mixing tracks etc. and as such is of little use in ShowMagic so it should be disabled.

DirectSound uses the 'emulated' port drivers on multi-output soundcards. The **Delta Series** and **ESI** range of cards possess these port drivers for Windows XP & Vista.

Delta Series Control Panel

If you wish to use all the output channel pairs separately then click on the *Monitor Mixer* tab and disable all monitor functions.



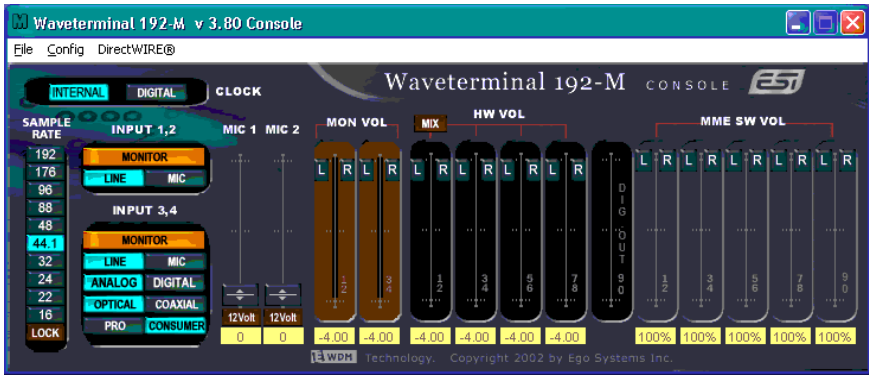
Select the *Hardware Settings* tab and make the settings as shown thus:

Select the *Patchbay / Router* tab and select *WavOut 1/2*, *WavOut 3/4*, *WavOut 5/6*, *WavOut 7/8* and *WavOut S/PDIF*.

Click on the *Done* button and the card will then be ready for use in ShowMagic.

ESI WaveTerminal Console

If you wish to use all the output channel pairs separately then click on the Mix button in the HW VOL section to disable it (then shown dark red):



Click on 44.1 for the sample rate and click on the Auto button below it to change it to Lock:

Make sure the Clock is set to INTERNAL, select Exit from the File menu and the card is now ready for use in ShowMagic.

Appendix B - Using LED Fixtures and Controllers with ShowMagic

Mtf LEDdance

The Mtf LEDdance dancefloor panels that incorporate triangular sections are supported in ShowMagic from v11.1 onwards. These panels have 3 operating modes - 4 channel, 13 channel or 25 channel.

Using the LEDdance Panels with ColorScene

In 4-channel mode each dancefloor panel occupies 1 ColorScene cell.

In 13-channel mode each panel occupies 16 ColorScene cells (4 across by 4 down) and each quarter of the panel can be coloured independently.

In 25-channel mode each panel occupies 16 ColorScene cells (4 across by 4 down) and each of the eight triangular sections of the panel can be colored independently.

Soft Patching the LEDdance Panels in ColorScene

Depending on the mode that the panels are set to, you may need to increase the size of the grid in ColorScene to accommodate them. E.g. if you are programming a dancefloor that consists of 5 panels across by 4 panels down (20 panels) and they are set to either 13 or 25 channel mode, then you will need to increase the ColorScene grid size to at least 20 across (5 x 4 cells) by 16 down (4 x 4 cells).

The panels need to be soft-patched manually in the following way:

1) Highlight the fixture fader on the fixture panel for the first panel.

2) Double-click on the cell where you want the top left of the panel to be soft-patched to. That panel will then occupy a 4 by 4 cell block at that position, and the next fixture fader on the fixture panel will then be automatically highlighted to speed up the patching process.

3) Double-click on the next cell where you want the top left of the next panel to be soft-patched to, and so on for the rest of the panels.

Coloring the Triangles

25 channel mode - clicking in the approximate area of the right angle corner of a triangle will color that triangle.

13 channel mode - clicking in the approximate area of the right angle corner of either triangle in a quarter of that panel will color that quarter of the panel.

Soundlight LED Spot

This fixture possesses 4 channels - Red, Green, Blue and White. The white channel can be used on its own or in combination with the others to achieve pastel colors.

The Soundlight range of LED fixtures also have 16-bit capability. If you wish to make use of this facility then select the **Options** > **Other Settings** > **16 Bit Settings** menu on the main desk screen and tick the **RGBW / CMY** and **Enabled** items.

Pulsar ChromaZone

Each Pulsar ChromaZone controller unit can be used to control up to twelve 3-channel Chroma devices such as the ChromaDome, ChromaPanel etc.

Like most LED fixtures, each Chroma device uses 3 DMX channels for controlling the color mixing of Red, Green and Blue. The fixtures are connected to the ChromaZone controller unit and ShowMagic is connected to the controller via a normal DMX cable. The ChromaZone controller unit can be set to run in one of 5 different modes: 6 channel, 9 channel, 36 channel, 42 channel or 46 channel.

Using 6 Channel Mode

In this mode the ChromaZone unit only uses the following 6 channels - 1 = Red, 2 = Green, 3 = Blue, 4 = Chase, 5 = Speed & 6 = Dimmer (intensity).

On the patch screen, highlight an empty fader, select Make **Pulsar** Model **ChromaZone** Option **6 Channel** using the fixture **Library** button and set the start address. Now by using the first 3 function faders you can set the red, green and blue color mix. Note: all the Chroma fixtures connected to the unit will then display the same color. The 4th function fader can be used to select one of the pre-programmed chases built into the ChromaZone unit (use the **Presets** panel as normal to view the preset chases available). The 5th and 6th function faders can be used to adjust the speed of the selected chase and adjust the intensity of the colors in that chase.

Using 9 Channel Mode

In this mode the ChromaZone unit uses the following 9 channels; 1 = Red, 2 = Green, 3 = Blue, 4 = Chase 1, 5 = Speed 1, 6 = Dimmer 1 (intensity), 7 = Chase 2, 8 = Speed 2 & 9 = Dimmer 2.

Select Make **Pulsar** Model **ChromaZone** Option **9 Channel** using the fixture **Library** button and set the start address. The first 6 functions work as in 6 channel mode above but in addition, a secondary chase can be run with the first using channels 7 to 9 to produce some mixed chase effects.

Using 36 Channel Mode

In this mode the ChromaZone unit uses 36 channels to control the Red, Green & Blue (3 channel) settings independently for up to 12 fixtures (3x12=36 channels), i.e.

Ch. 1 = Red on fixture 1, Ch. 2 = Green on fixture 1, Ch. 3 = Blue on fixture 1,

Ch. 4 = Red on fixture 2, Ch. 5 = Green on fixture 2, Ch. 6 = Blue on fixture 2 and so on up to ….

Ch. 34 = Red on fixture 12, Ch. 35 = Green on fixture 12 and Ch. 36 = Blue on fixture 12.

Use one ShowMagic fixture fader for each Chroma fixture, in this way you can use the grouping keys [F1] to [F8] to set up different groups for the fixtures - Odds and Evens etc.

Highlight the first empty fader row on the patch screen that you wish to use, select the appropriate Pulsar fixture from the ShowMagic fixture library, copy however many Chroma fixtures you are using (up to 12) by using the [F12] (copy) facility and enter the start address of the ChromaZone pack as part of the command,

Example:
If you have assigned the first fixture to fader 13, are using 12 Chroma fixtures and the start address of the ChromaZone is 30 the following keystrokes would copy and patch all 12 Chroma fixtures to faders 13 to 24: [F12] [1] [3] [+] [1] [1] [*] [3] [0] [Enter]

Using 42 Channel Mode

In this mode the first 6 channels of the ChromaZone are used as in 6 channel mode above to control all 12 Chroma fixtures together i.e. 1 = Red on all, 2 = Green on all, 3 = Blue on all, 4 = Chase, 5 = Speed & 6 = Dimmer (intensity). However, the next 36 channels are used to control the Red, Green & Blue (3 channel) settings independently for each fixture.

The way to patch this is as follows:

Highlight an empty fixture fader (e.g. **001**), select Make **Pulsar** Model **ChromaZone >** Option **6 Channel** using the fixture **Library** button and set the start address. Next, highlight fixture fader 013 and select the appropriate Pulsar fixture from the fixture library. Copy another 11 fixtures on faders 014 to 024 using the [F12] copy function as described above but this time use the start address of the ChromaZone + 6 as the start address of these fixtures. The reason for copying the 12 x 3 channel fixtures onto the next page of fixture faders is that they are then all shown together on the same page of fixtures and therefore easier to access and group etc.

Using 46 Channel Mode

In this mode the first 9 channels of the ChromaZone are used as in 9 channel mode above to control all 12 Chroma fixtures together i.e. 1 = Red on all, 2 = Green on all, 3 = Blue on all, 4 = Chase, 5 = Speed & 6 = Dimmer (intensity). However, the addition 10th channel is used as a master dimmer for the intensity of all fixtures and both chases. The next 36 channels are used to control the Red, Green & Blue (3 channel) settings independently for each fixture as usual.

Select Make **Pulsar >** Model **ChromaZone** Option **10 Channel** using the fixture **Library** button and create 12 Pulsar fixtures as described for 42 channel mode as above.

Other Makes of LED Fixtures

Most other makes of LED fixture possess Red, Green and Blue channels.

If a fixture possessing Red, Green & Blue channels is not in the ShowMagic fixtures library, simply select Make **Generic Colour** Model **RGB** using the fixture **Library** button and re-label it accordingly.

If a fixture possessing Red, Green, Blue & White channels is not in the ShowMagic fixtures library simply select Make **Generic Colour** Model **RGB+W** using the fixture **Library** button and re-label it accordingly. And so on.

If a fixture possesses any other color channels, or colors in a different order - e.g. Yellow, Green, Blue & Red etc. - then simply make the fixture by dropping the functions in the correct order and select the appropriate fixture type: RGB Control; Led Cluster; LED Strip; LED Panel; LED Par; LED Spot; LED Flood; LED Panels; Moving LED etc.

Lee and Rosco color filters presets are available on the presets panel and these can be used with any fixtures that contain Red, Green & Blue or Cyan, Magenta & Yellow channels in any order.

Appendix C - Quick Key / Command Reference

General on Main Desk

[Ctrl]	Hold down when clicking on light blue, 'critical' items to change them.
	Hold down (after dragging, but before dropping) an event button to *move* that event onto the new button.
[Enter]	Completes the entry of labels and values.
[Shift]+[Esc]	Used to enter a password to unlock the User Panel.
[Spacebar]	Equivalent to clicking on left hand side **Play** or **Go** buttons.
	When labels are being typed this inserts a space.
[Delete]	Deletes highlighted button or display item.
[Tab]	Used to toggle between, and highlight, settings in the details display.
[Backspace]	Deletes last character when typing in labels.
[Home]	Selects the first fader page, button or item in a display.
[End]	Selects the last fader page, button or item in a display.
[Page Up]	Selects the previous page of faders, buttons or display items.
[PageDown]	Selects the next page of faders, buttons or display items.
[↑] [↓]	Scrolls up and down event buttons.
[←] [→]	Scrolls horizontally through event buttons.
Right-click	On pink items to produce a pop-up menu of options.
Single-click	On an event button to highlight it and view its details in the details display.
Double-click	On an event button to start or stop that event.

Master Panel on Main Desk

[Ctrl]	Hold down and double-click on any clear button on the Master panel to clear ALL events.

Fixture Panel on Main Desk

[Shift]	When the fixture panel is on the left of the screen, holding this down produces the preset panel on the right.
[Ctrl]	Hold down when dragging faders or trackball to select fine adjustment.
	Hold down and double-click on a fader to set it to locked mode or released mode.
	Hold down and double-click on the group window, e.g. showing **F1**, to include all 12 fixture faders in that group.
	Hold down and double-right-click on the group window, e.g. showing **F1**, to remove all 12 fixture faders from that group.
	Hold down and double-click on **Centre** or **Locate** to lock the function faders.
	Hold down and double-right-click on **Centre** or **Locate** to unlock the function faders.
	Hold down and right-click on a preset panel to select all presets up to that one for the Scene generator.
[Enter]	Executes the displayed commands (if any) on the fixture panel.
[*]	At: Used to specify a value for a fader.
	To: When used with the [F12] copy key to specify another fixture fader.
[/]	Thru: Used to specify a range of faders.
[+]	Used to include a fader in a command.
[-]	Used to exclude a fader in a command.
[F1] to [F8]	Selects / de-selects a fader group.
[F12]	Copy Function: used to copy a fader's function setting to the range of faders specified.
[F12] [F12]	Copy Fader: press [F12] twice to copy all of a fader's functions settings to the range of faders specified.

[Del] Delete Command: Deletes the command shown in the attribute display on the Fixture panel.

[Delete] Zero Fader: Sets highlighted function fader to 0.

[↑] [↓] Scrolls through the fixture faders.

[←] [→] Scrolls through function faders.

Scene Panel on Main Desk

[Ctrl] Hold down and drag to 'slide' Scene button levels up or down.

Hold down and click on a Scene button (in record mode) to call up the Scene generator.

[-] Zeroes highlighted fade-in / fade-out time settings.

Single-click Anywhere in the details display to edit the scene settings for the currently-highlighted lighting scene event.

Sequence Panel on Main Desk

[Ctrl] Hold down and double-click on a step time to select the same time as the previous step.

Hold down and click on the Sequence **Rec** button to record a snapshot to the currently highlighted Sequence button.

Hold down when dragging events into a sequence to create an event 'change' step.

Hold down and click on the Sequence **Shf** button to set auto playlist times.

Hold down and double-click on a *Null* event step to change it to a *Step Text* event.

Hold down and press [Insert] to insert a *Null* event step with a *Part-Step* number.

[Shift] Hold down to display settings faders for highlighted sequence step event, if any are available.

Hold down when clicking / right-clicking on exclusivity groups to select sub-groups.

[Ctrl]+[Shift] Hold these down and click / right-click on sequence step's times to 'auto time' all

steps in the marked area from that step downwards.

[Insert] Inserts a *Null* sequence step.

[-] Zeroes highlighted time settings.

[↑] [↓] Scrolls up and down the sequence steps display when it is selected on the Sequence panel.

Sound Panel on Main Desk

[Ctrl] Hold down and tap [Spacebar] 4 times to log BPM when a sound event is playing.

Control Event Panel on Main Desk

[Shift] Hold down and click on X or Y settings to select ***Ctr***.

Action Panel on Main Desk

[Shift] Hold down and click to toggle between midi note / program change selection on the action panel.

[Tab] Used to scroll through extra midi trigger functions -**Back**, **Pause** & **Next** - on action panel.

Patch Screen

[Ctrl] This must be held down when using the mouse to change items colored light blue.

Hold down & double-click on function number to make it the main dimming function (number shown yellow).

[F12] Copy fader: used to copy a fader's assignments to the range of faders specified.

[/] Thru: Used to specify a range of faders or fixtures.

[*] At: Used to specify a Dmx address.

[Del] Delete Command: Deletes the command shown in the command display.

[Delete]	Delete Fader Assignment(s): Deletes assignments to the highlighted fader or range of faders.
	Delete Fixture: Deletes a fixture from a fader if the fixture is highlighted.
[Insert]	Insert Fixture: Adds a fixture to a fader.
[+]	If used in a copy command, it will add the specified number of fader assignments to the copy.
[↑] [↓]	Scrolls through Faders.
	Scrolls through and tests Dmx channels if Dmx test button is on, or tests fader's dimmer channels if Fdr test button is on.
[Home]	Displays the first page of faders in the list.
[End]	Displays the last page of faders in the list.
[Page Up]	Displays the previous page of faders in the list.
[Page Down]	Displays the next page of faders in the list.